

AMERICAN VETERINARY REVIEW.

MARCH, 1908.

EDITORIAL.

Paris, Feb. 15, 1908.

I was quietly engaged writing my chronicle for this month, when a cablegram from New York was handed to me. It was short, but was terrible!

It contained but three words; but in reading them, passed before my eyes, full of tears, the thirty-one years during which I had known him as a student, as a teacher, as a practitioner, and for the last eleven years as another myself, one of my co-editors in the Review.

"BELL DIED SATURDAY," said the cable, and with these three words sounded for me the tolling of the irreparable loss of a true friend, of a faithful companion and of a great lover of our profession.

Our Journal is saying to the world: The life and work of our dear friend! I must here add a last farewell as if YOU, my confreres and my colleagues, who were near him, who may have assisted him in his last moments, who have attended his funeral and tendered his family words of condolence and of sympathetic consolations, you were the fortunate ones, you have paid him your indebtedness of friendship, while I alone, away from you all, can only read the sad sentence, "Bell is dead," and try to reconcile myself to the horrid fact with the souvenir of the great friendship that united us and of the affectionate feelings that have always existed since 1885, when he entered the class of the A. V. C., to the very last month almost of his life, all now broken forever!!!

ROSCOE R. BELL, D. V. S.

Since the last issue of the REVIEW all that was mortal of our distinguished colleague, Roscoe R. Bell, D. V. S., has been laid in the silent tomb, yet he lives, and will continue to live, in the hearts and memories of all true and noble members of the veterinary profession, for whom he expended freely his energy and gave of his great ability, without reserve, for the advancement and upbuilding of the profession.

Although Dr. Bell took an active part in the proceedings of the American Veterinary Medical Association at Kansas City, last September, and gave everything of value and interest to the profession in the pages of the REVIEW, yet it was evident to those close to him that he realized that his earthly career was rapidly approaching its end.

His old friend, Dr. James L. Lobertson, accompanied him on his trip to Kansas City. They first, however, visited Dr. Bell's farm in Virginia and the scenes of his childhood. After the great meeting at Kansas City was over, Drs. W. L. Williams, Veranus A. Moore, of Cornell University, and the writer accompanied him on his homeward journey. It was a congenial party, but there was an indescribable sadness which all felt that Dr. Bell was probably returning home from the last A. V. M. A. meeting that he would ever attend. He alluded to it himself.

His disease was such that medical science could do nothing except in a palliative way, but it is consoling to know, that one whose life had been given up so largely to his profession should have enjoyed during his last illness the comforts of home, the tender care of a devoted wife and the companionship of his children.

Dr. Bell died February 8, 1908. The funeral services were held in the Congregational Church, near his home (Kensington Station), Brooklyn, N. Y., on the evening of February 11. The services were conducted by the pastor and by Kings County Lodge No. 511, F. & A. M. The spacious church was filled with many of Dr. Bell's professional associates, representatives of the city,

state, and of the American Veterinary Medical Association, as well as by the veterinary faculty of New York University, representatives of other colleges, other state associations, Kings County Lodge No. 511, F. & A. M., friends and neighbors. A large display of floral pieces was strikingly beautiful. "A. V. M. A.," so dear to his heart, were letters that stood out in bold relief on one of the large floral pieces.

Roscoe R. Bell, D. V. S., distinguished himself as a lecturer, educator, practitioner, writer, editor and champion of everything that tended to the broadening and advancement of veterinary science and the uplift of the veterinary profession.

The instruction of not a few of the most successful educators and prominent professors in every calling is limited largely to the students whose good fortune it is to listen to them. It was not so with Prof. Bell. He had the power of assimilating, in a most remarkable degree, everything known to the science and of imparting his knowledge in a way that was most useful and comprehensive, not only to the classes he lectured to in the college, but to the profession at large.

No college platform was large enough for Roscoe R. Bell. His forum for discussing advance knowledge, considering large and intricate professional and educational problems, was the assemblies of his profession and the pages of the REVIEW. Then again, his ability was not limited to the assimilation of scientific truth as it was evolved and imparting his knowledge to others, but he had the power of harmonizing conflicting forces for the everlasting good and broadening of the profession. He was eminently practical in every phase of his professional life, in his teaching and in his professional discourses. A man of less ability would take for the subject of his paper some rare or unusual disease or operation. Dr. Bell delighted to have for his subject some common disease or condition met with in everyday practice which he thought would be most useful to the greatest number of his colleagues, and his treatment of a subject of this class demonstrated the breadth and character of his scientific knowledge, his resource-

fulness and his practicability, which invariably contributed in no small degree to the edification of all who heard him.

Where is the veterinarian whom Dr. Bell has not spoken to through the pages of the REVIEW, or where is the veterinarian who has not listened to him with pleasure and profit in expounding some scientific discovery, in reviewing and summing up the various points of some intricate educational or professional problem, or in championing the cause of veterinary progress in America! Dr. Bell's presidential address before the American Veterinary Medical Association at St. Louis, in 1904, in which he reviewed the educational problem in America, is a masterpiece. It is indeed sad that such a useful and brilliant professional career should have to end in the zenith of his intellectual powers.

As is known to most veterinarians, Dr. Bell was a very successful practitioner. He conducted one of the largest practices in this country up to his retirement from practice about two years ago, yet he always took time to attend the meetings of his state association, and the annual gathering of the A. V. M. A., irrespective of where the meeting took place.

Dr. Bell was born in Augusta County, Va., September 16, 1858. He acquired his early education in public and private schools in Richmond, Va., and from thence went to Norwood College, in the same state. Being bereft by death of both parents at an early age, he was thrown upon his own resources and turned his attention to printing and writing for the press of Virginia, studying the best he could, and in 1880 came to New York, finally becoming a member of the staff of *The Spirit of the Times* until he entered the American Veterinary College, from which he graduated with honors and the degree of Doctor of Veterinary Surgery in 1887. He was married November 29, 1888, to Miss Rebecca Moss, who, with two sons and an infant daughter survive him.

He served as a veterinary inspector of the Bureau of Animal Industry, U. S. Department of Agriculture, in the eradication of

contagious pleuro-pneumonia of cattle from the American continent. In 1888 Dr. Bell became professor of Materia Medica and Therapeutics in the American Veterinary College, and held that chair until 1899, when the American Veterinary College and the New York College of Veterinary Surgeons were united and made a department of New York University. Dr. Bell took a prominent part in effecting the amalgamation of the two schools and in the affiliation of the consolidated school with the university. The council of New York University promptly appointed him to the chair of Material Medica and Therapeutics in the New York-American Veterinary College, which position he filled with credit and honor until his last illness overcame him. He was veterinarian to the Police Department of Brooklyn for a number of years. "The Veterinarian's Call Book," now universally used by veterinary practitioners, is the product of his genius.

Dr. Bell's worth and work have been recognized by the profession in many ways. Not long since he was the president of the New York State Veterinary Medical Society. Only two months prior to his death he retired from the presidency of the Veterinary Medical Association of New York City. He made a remarkable record as president and has set a high standard that it will be no small task for his successors to maintain.

At Ottawa, Canada, in 1903, Dr. Bell was accorded the highest honor in the gift of the veterinary profession of America. The accomplishments of the A. V. M. A. under Dr. Bell's presidency are so recent as not to need review at this time.

Dr. Bell's mind was largely occupied in those things which most concern the welfare of the profession until his strength failed him. It will be our purpose, as it is our bounden duty, to consummate and continue, through the REVIEW, the work he has committed to our care.

We realize in a deep sense the incompleteness and unworthiness of this tribute to the life and worth of Dr. Roscoe R. Bell, but we feel that the readers of the REVIEW will make all due allowance for our shortcomings at this time owing to the distressing exigencies under which we labor.

W. H. L.

EUROPEAN CHRONICLES.

PARIS, January 15, 1908.

The month of September in 1908 will see in the United States two great professional events. At the beginning of the month, the usual anniversary meeting of the great national organization of veterinarians, the American Veterinary Medical Association, and then from the 20th to the 3d of October, the International Congress of Tuberculosis. The former having just closed its works as the second will be ready to begin hers.

For the veterinary profession of America, these two events will no doubt be brilliant opportunities. Many of the attending members of the association will certainly take advantage of their visit to Philadelphia to pay a professional call to Washington, and, again, perhaps some of the veterinarians of Europe, who will officially or otherwise be called to the National Capital for the 20th of September, may be induced to advance their trip to America and stopping in Pennsylvania, participate in the works of our great gathering.

An intimate acquaintance between the veterinarians of the two hemispheres would be the result, and no one can remain blind to the many advantages, social and professional, that would necessarily derive from such gatherings.

Our American confrères will give their foreign brethren the cordial reception which is usual to Americans and the establishment of mutual professional sympathy and friendship will have for result a solid union of those two branches, the European and the American, of the same grand family, the Veterinary Profession.

It is not my intention to make any suggestions to our worthy president of the A. V. M. Association, Dr. Dalrymple, nor to the president of the seventh section of the congress, Prof. Leonard Pearson, as I know both will take all the necessary steps to see that the amalgamation should be firmly realized and consolidated. As far as I am concerned I will do all I can to urge my French confrères to attend to both meetings, will tell them

of the cordial reception that they will receive, of the warmest welcome which they can expect and offer myself as a guide to them should my good star only permit me to accompany them.

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I regret that to this date I have not yet seen much information in relation to the work of the seventh section of the International Congress, as I am sure I would have found in them material to call attention and offer inducements to veterinarians on this side of the Atlantic. As it is I only know that this section will treat of "Tuberculosis in Animals and its Relation to Man."

On the occasion of this heading, our readers may find some interest in the conclusions of a communication made by Prof. Calmette at the International Conference of Tuberculosis at Vienna in September of last year, on the important question of "The Normal Tracts of Entrance of the Tuberculous Virus in the Organism," and which was published in the bulletins of Pasteur Institute. The author, limiting the consideration of the subject only to the results gathered from French sources, examined these normal tracts under only three headings, the respiratory, the intestinal and the hereditary, and he resumes as follows the conclusions:

1st—Contagion of tuberculosis cannot be realized experimentally through the respiratory tracts, except with great difficulty, by the inhalation of tuberculous products or by cultures in *state of moist dusts* (Sprays). Infection by inhalation of *such dry dusts* is very exceptionally realized. Consequently it must be admitted that *dusts carrying bacilli play no part in natural contagion*.

2d—The ingestion of virulent tuberculous products or of cultures in *fine liquid emulsion*, always succeeds in giving tuberculosis to all susceptible animal species. The bacilli can then be absorbed through the intestinal mucous membranes without producing lesions on their way, they are carried with the chyle

to the mesenteric glands. From there they are frequently transported by microphage leucocytes in the current of the lymph of the thoracic duct and thrown with it into the general circulation. Pulmonary capillaries are the most exposed to become the seat of the first formed tuberculous lesions.

3d—The evolution of tuberculous infection is so much more rapid and serious that the number of virulent elements absorbed by ingestion is greater and that the occasions for absorption are repeated at shorter intervals.

4th—Closed tuberculosis lesions, resulting from one *single, unique* infection are liable to get well. This recovery confers a *true immunity* against new infection through the digestive canal. The duration of this immunity is not yet known.

5th—*Parasitar heredity* of tuberculosis is very rare. It always results from an *infection* in utero and may be considered as a factor of some importance.

6th—The notion of *tuberculisable condition* or *heredo-predisposition* must be abandoned, as experimentation shows that *tuberculous infection is always possible* on susceptible animals and that it is in direct proportion *with the number of virulent elements absorbed or according to the frequency of the contaminations*.

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Those among our readers who receive the bulletins of the seatings of the Société Centrale here, may wonder at the meanings of the title to a communication that I made before that honorable body, title which translated means: "The Right of Priority of the Application of Cocaine in the Differential Diagnosis of Lameness Claimed for America."

How was I brought to make the communication and take up again the flag of American veterinary profession and hold it high and proud before my French colleagues is quite a story. Here it is, how it all came about.

When I returned for good in France and frequented the professional societies, I heard on several occasions, of the dis-

covery that had been made (?) by a military veterinarian of the use of cocaine in the diagnosis of lameness. The question was the subject of much talk and I took it for granted that the priority that was claimed by our military confrère was referring only to his own country, to France. The thing was old to me. I knew it was of daily practice in the States, I had resorted to it myself very often, and of course, I was not going to dispute a claim for France, as long as I was sure it was limited to that country.

A short time ago, however, the thing took another turn. A rival to the first military veterinarian, also presented himself and although he did not care for the title of priority, he offered proofs that he had resorted to cocaine before his army confrère. This gave rise to a discussion before the Société Centrale, a committee was appointed to inquire, a report was presented and at the conclusion I made the following remarks, which translated, read: "I do not wish to say anything in relation to this question of priority between the two gentlemen, as I have always thought that it was a priority for France alone that was claimed. But I nevertheless desire to state the fact that the use of cocaine to localize the seat of lameness has been known and extensively resorted to in the United States several years before my return to France in 1895, consequently before the question was brought here. The publications that exist in the AMERICAN VETERINARY REVIEW will show it. I have resorted to it myself many a time, etc., etc."

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I had put myself in trouble and I was mildly criticised by one paper, rather severely by another, and finally by the claiming veterinarian, who among his remarks said: "It is without any supporting proof that Mr. Liautard has declared that cocainization of nervous trunks, with the object of localizing the seat of lameness has been put in practice in Germany and in the United States before 1895." And again: "When Mr. Liautard shall

have given me these proofs I will gladly correct my previous historical statements in the matter."

Of course, I had to reply. Hence my communication. I had advanced that in the States of North America we knew of the application before 1895, and I had to prove it. The thing would have been difficult, if not impossible, had it not been for the REVIEW, which gave me three answers. One from Dr. W. J. Torrance, of Cleveland, Ohio, who recorded the two first cases of the use of cocaine in differentiating doubtful cases of lameness. One from Dr. A. H. Baker, who states that it might be resorted to so as to prove a diagnosis. and finally one from Dr. J. E. Brown, of Oskaloosa, Ia., who had written: "As testing proofs in the differential diagnosis of lameness cocaine has not given me very satisfactory results." * * * These were the proofs that I wanted; they were the ones that my opponent was justified to ask. They were published, printed and dated. Having therefore the only qualities that justify without doubt, at least until more information can be had, the positive right to priority.

I closed my communication in claiming the priority for the Veterinary Profession of America of the application of cocaine, which had been used first of all by Dr. Torrance in 1890; *five* years before my French confrère published his observations.

I have called on him to join me in making the claim and I am quite sure he will!

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I have an idea that this incident of my defending priority as belonging to American veterinarians and of relating it here may be of some advantage to our readers. Claims of priority are, so to speak, the title of patentee that is only permitted to a professional man. Different from it, however, because it is purely honorific and not likely to bring the pecuniary gain that a patent will, but yet in a certain light more important.

And how many are ignorant of it! How few take advantage of it?

I have received lately from our esteemed friend, Dr. M. E. Knowles, a letter which I am sure is a proof that he did not make any claim for the important work that he made in introducing "Artificial Impregnation" for sterile large females, in the States.

He writes: "I believe, it is likely I am the first veterinarian in this country at least, to attempt the artificial impregnation of the mares. The first attempt being made in 1886." It was successful; and since, how many mares have been treated by this method. The operation brings such great results that, although performed by laymen, from 50 to 60 per cent. of mares treated by artificial impregnation get in foal. What enormous advantage and how great the indebtedness of breeders is, towards the man who has told them of the operation! I do not know that Dr. Knowles has ever made the claim of that priority, for this operation. But if not, taking into consideration the great importance it has, I think for him and for the credit of American Veterinary Profession, it is very regrettable.

There is, however, a good lesson to be derived from this little event, and which one desirous of establishing a right to priority will do well to bear in mind, namely, that he is sure that he is the first in the ring and that as far as he has been able to ascertain, after searching in the literature on the subject, if there has been anything published before he made his discovery known. And with all that he must be prepared to be obliged to renounce his claims, as every body is not polyglote, and in our days, at the rate scientific discoveries are moving, one must expect that these can be made and recorded in languages with which one may be ignorant.

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I have in a previous communication made allusion to the method of Bier, so called, from the one who introduced it in surgery. I may again to-day relate a few interesting points on the same subject, as they appear to me important and are con-

sidered by M. M. Lemire and Ducoutroy in the *Recueil de Médecine Veterinaire*.

The therapeutic method recommended by Dr. Bier consists principally in producing artificially an hyperæmia, active or passive, according to the cases, for the treatment of some morbid lesions.

In the generalities of his work, "Hyperämie als Heilmittel," Dr. Bier says: "I believe that I am authorized to say that anæmia is never seen occurring in an organism, which is endeavoring to eliminate a morbid center or to render it harmless and which succeeds in doing it. This center is always permeated or surrounded with hyperæmied blood vessels. Therefore if we admit that the reactions of the organism are useful manifestations, natural efforts toward recovery, we must say that, of all the spontaneous curative processes, hyperæmia is the most common."

The pathogenous agents which give rise or keep up morbid centres by their increasing number or by the toxins that they secrete, are fought against efficaciously by passive congestion. By the theory of phagocytosis of Metchnikoff, it is known that, in hyperæmia by moderate stasis, leucocytes gather in great numbers to the diseased spot. Consequently this theory justifies the use of hyperæmia by stasis as therapeutic method. And, as Bier says: "We shall only imitate a natural curative process if, to treat some given bacterian affections, we only strengthen the already existing hyperæmia, or if we establish it where it is not sufficiently powerful."

As an affirmation three cases are published which had been treated by passive hyperæmia, or the venous stasis obtained with an elastic band.

The first is a case of traumatic arthritis, relieved in less than a month; one of traumatic synovitis, cured in a few days, and one of phlebitis of the left hind leg that got well in seventeen days. These three patients were treated with the application of a

rubber band above the seat of injury. I may later on have occasion to review the method more thoroughly.

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The application of this method requires some special indications which I may call practical considerations. Indeed, the method of Bier is simple, economical, fructuous in its results and it deserves to enter in veterinary therapeutics. The results mentioned above justify its application in similar cases which could be treated by passive hyperæmia, and it seems by these cases that the efficacy of the stasis obtained by moderate pressure, is better than the one gained by a strong stasis with tight band, which presses upon the nerves and disturbs the nutrition of tissues. Anyhow this last mode of application has many inconveniences with our patients; first the minutious watching that it requires and second the serious sequelæ that may follow. These can be avoided with moderate pressure, and to realize it, it requires only a slight and short education of the hand. What must be avoided is, too much pressure so as to interfere with the circulation and numb the parts. It is better to secure the band in such a way that the different turns shall not cover each other entirely. In this way the pressure shall be graded and it can be applied upon a broader surface of the leg. A last condition is, that the band shall not be applied too near the seat of inflammation. In the horse, two regions, the inferior extremities of the forearm and of the shank, will be often the seat of the application of the bandage on account of the facility which they offer to hold it; but with a little care and attention no inconvenience will result from this if one is careful not to leave the compression band more than twelve hours a day at a time. Anyhow this compression must have only a limited duration and it must be reduced gradually when recovery is approaching. Yet it must not be stopped too early.

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The two figures that I present to our readers are illustrations of a case of primary epithelioma of the superior jaw, whose

specimens I examined at the Société Centrale, where Prof. Petit exhibited them. The cancer had made its appearance some time before and had been treated as a case of actinomycosis. However, it grew very rapidly, became as big as the two fists of a man and spread right and left. Notwithstanding large quantity



THREE QUARTERS VIEW OF THE HORSE WITH ITS TRACHEOTOMY TUBE.

(From the *Bullet. de la Soc. Cent.*)

of iodine, it assumed such proportion that the respiration was interfered with and tracheotomy had to be performed. Notwithstanding the progress of the disease, the general condition kept comparatively good until finally he was slaughtered.

In showing the specimen Prof. Petit made some interesting

remarks, saying that cancers of the jaws were not rare in animals, and specially in horses. It is the upper jaw which is most commonly affected. Whether they exist on one or the other of the jaws, epitheliomas or sarcomas, may reach enormous



FULL FACE VIEW.

dimensions. When the upper jaw is diseased, a destruction of the palatine roof may take place and a communication is formed between the mouth and the nasal cavities. The sinuses can also be involved.

What is the pathogeny of cancers of the jaws? These tumors are pavementous epitheliomas. They draw their origin either from the buccal epithelium or the paradental epithelial remains. It is indeed certain that these remains may give rise to voluminous cancers. However, it is difficult to say if pavementous epitheliomas may not also in some instances have a deep and congenital origin different from the one which is generally considered as belonging to them.

The illustration of the poor suffering animal is certainly interesting.

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One year ago, in my chronicle for March, I related the application that had been made of crystallized boric acid in the treatment of severe wounds and in particular of those involving synovial membranes, a method which was introduced by Mr. Busy, in a communication which appeared in the *Recueil de Medecine Veterinaire*, and where after enumerating the chief properties of the acid as a wound dressing and the advantages that would be derived from its use, he mentioned the good results he had obtained in the treatment of several animals very seriously injured.

In a more recent article, Mr. Busy gives further facts in relation to his mode of treatment, by the use of the acid either alone or associated with other medication, among them he says: "Though the treatment is not infallible, in the immense majority of cases, with it, recovery becomes only a question of days." "When there is arthritis, the skin round it is often loose, by inflammatory process, from the synovial underneath, this condition makes it easier to obtain an antiseptic subcutaneous peri-articular dressing in packing under the skin from 30 to 50 grams of the acid. If the separation of the skin does not exist or if it is limited, it is necessary to make it or enlarge it with the finger or the blunt scissors, isolating the tegument from the tissues underneath."

Boric acid has a specific action on synovials and its antiseptic properties, which can be increased by the addition of other

substances more or less volatile. They are very efficacious to act and penetrate between bony surfaces, which would otherwise escape the antiseptic. Early treated by this method, arthritis will leave no trace after a few weeks.

A peculiarity of the external use of boric acid is that it rapidly brings on loss of flesh in the animal treated. It is said that German physicians take advantage of this property by prescribing to their obese patients 50 centigrams of the acid daily. Subcutaneous dressings round a synovial may produce a noticeable loss of flesh in 25 to 30 days. Hence the indications for heavy feeding of animals under that treatment.

Busy relates then the successful results that he has obtained in several cases of arthritis of the elbow-joint, of carpal articulations, of the femoro-tibial and of the tarsal joints, as well as in the treatment of arthritis of other synovial, such as that of the tarsus and tarso-metatarsal regions.

The treatment may not be a panacea for all cases, but surely it has been sufficiently successful to deserve a fair trial at the hands of other practitioners, whose experience only will justify a general acceptance in everyday practice.

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Although the little notice of the bottom of the cover page of our issues has remained the same for many years, and although it is requested by it that authors, editors or publishers should send books for review to my address, it is very, very seldom that such is done by American writers, and the result is that I have no opportunity to fulfill that part of my duties. It is true that some books have found their way in the office of my co-editors, but with few exceptions, not in mine. Is it because my criticisms are too severe, not sufficiently admiring or what? Well, I am sorry if I have not pleased every one, and yet it is a kind of compliment, as many of my criticisms I have found substantiated by those which have appeared in other journals, reviewing the same publications. I cannot make the same remarks in relation

to European publications and I suppose that even if my criticisms are not always palatable, authors and editors find at the same time that the notice they get from the REVIEW is, after all, something and not detrimental to the success of the book.

I have kept a small space in my chronicle for bibliographical notices; whoever may wish to fill it will always receive at my hands a fair, friendly, unprejudiced and impartial treatment.

This month, I have from Asselin & Houzeau a little treatise of diseases of the horse by Mr. F. Breton, late assistant to the chair of clinic at Alfort, and Mr. E. Larieux, army veterinarian. The book is entitled "Elements of Veterinary Clinic." It is a small book of 360 pages, divided into four chapters. The first treats of the clinical examination of the patient. This part recommends itself by the good practical facts that it considers. The second chapter treats of Medical and the third of Surgical clinic. The last chapter reviews the medications that are most usually resorted to. The book is one which will scarcely be of great advantage even to the young practitioner. It is more a general *vade mecum* of theory and practice. Too concise and far from what could have been expected from the authors. It is certainly the forerunner of a more complete treatise of medical and surgical pathology, to appear at a later date.

A. L.

THE IMPORTANCE OF ESTABLISHING STANDARDS OF SOUNDNESSES IN HORSES.

There does not seem to be any question as to the desirability and importance of maintaining standards of *excellences* for different classes of horses, cattle, sheep, swine and other domesticated animals. Whenever it has come, however, to the matter of establishing definite standards of *soundnesses* for horses the profession has hesitated and left the matter to the experience and judgment of the individual practitioner to determine for himself.

Here is a difficult problem, but one which has to be met. It

is up to the profession to establish and maintain standards of soundnesses for the several classes of horses. Standards of soundnesses should be fixed. Then there would be something definite for the practitioner to go by in reaching a conclusion and in rendering his decision. Fixed standards of soundnesses would simplify many vexed questions in veterinary jurisprudence and would frequently relieve veterinary practitioners of embarrassment in practice and in court. What constitutes soundness in a given particular would be settled and the only thing to be ascertained would be the physical condition of the animal in regard to a point or points in question.

The urgent importance of the subject under consideration is emphasized at the present hour by reason of the fact that the Bureau of Animal Industry, U. S. Department of Agriculture, is making inquiry of the leading veterinary practitioners of the United States as to what unsoundnesses in horses should disqualify animals from the show ring, with a view of obtaining a consensus of opinion based upon the widest possible professional authority, for the purpose of making an official list of unsoundnesses disqualifying a horse from the show ring.

The inquiry opens up a big subject and demonstrates to the mind of the veterinary practitioner the importance, not only of having a list of show ring disqualifications, but of establishing standards of soundnesses for the several classes of horses. When it comes to fixing standards of soundnesses it may be found desirable to make two standards—one of absolute soundness and another of serviceable or practical soundness.

The passage in various states of laws providing for the licensing and registration of stallions for public service, and requiring these animals to be examined for soundness by a qualified veterinarian before license is granted, necessitates that definite standards of soundnesses be fixed to guide veterinarians in rendering decisions, and which may be recognized by the courts. Veterinarians, breeders, dealers and horsemen generally would welcome the establishment of an official list of hereditary and

other infirmities, malformations and abnormalities which would warrant the disqualification of a stallion from the stud.

Then again, if standards of soundness are fixed, veterinary judges will be better able to insist upon a more definite and satisfactory recognition of their services in the horse show arena. Such officials should have supreme authority in the matter of the soundness of exhibits and have the title of "Veterinary Judge." Veterinary judges should not have to wait to be asked for an opinion, but, on the contrary, they should pass on the soundness of the horses that enter the show ring and advise the other functionaries of the existence of any unsoundness disqualifying such animals.

The profession should not only fix standards of unsoundnesses, but it owes it to its own dignity to insist that veterinary judges in the show ring shall be recognized as their position and the importance their services demand. The veterinary judge's absolute and sole right to pass upon the physical qualifications of soundness must at all times be insisted upon.

It seems unwise for horse show directorates to allow veterinary judges to be ignored in their professional rights, for if legal complications arise over the decision of the judges, and it is discovered that the veterinarians were not consulted it would weaken materially the case in any court of law, for the qualified veterinarian would naturally be the only one considered competent by the court to determine upon the soundness or unsoundness of an animal.

The Bureau of Animal Industry has taken up one of the most important phases of the horse industry, one in which every veterinary practitioner in the land is deeply interested in and we confidently believe the members of the profession will be only too glad to co-operate with the bureau by furnishing the information desired. The subject is also worthy the serious consideration of the American Veterinary Medical Association, and we believe that President Dalrymple would do well to give it a leading place on the program at Philadelphia.

The REVIEW is glad to champion the movement to fix standards of soundness of horses, for it believes its accomplishment would be highly advantageous to the veterinarian, the horse breeder, the horse owner and others concerned in the betterment and development of the horse industry.

W. H. L.

DISEASED MEAT.—The REVIEW would supplement its editorial on the "Necessity for Veterinary Inspection of Animal Foods for Human Consumption," which appeared in our last number, by inviting the attention of the reader to the subjoined abstract of a statement issued in Albany by the Citizens' League of the State of New York, and published in the *New York Herald*, February 16, 1908:

"It is known to the inspectors of the Bureau of Animal Industry of the Department of Agriculture in Washington that unscrupulous dealers in this and other states are making a practice of disposing of cattle which they know to be diseased to slaughter houses and firms which have no federal inspection. In New York there is no effective inspection except the federal inspection, and these diseased cows are killed and sold to consumers without any check on their healthfulness as food.

"Statistics demonstrate that these firms which have no federal inspection, and therefore virtually have no inspection at all, have been made the dumping grounds for diseased meat.

"The reference made by Governor Hughes, in his message, to the spread of bovine tuberculosis calls attention to a phase of the meat scandal hardly less important than those which inspired the writing of Upton Sinclair's 'Jungle,' and the passage of the new Federal Meat Inspection law by Congress in 1906. The imperative need for an adequate inspection of meat killed and sold within the State of New York is due to the inability of the federal government under the United States Constitution to extend its supervision of slaughter houses and packing houses further than to those which do interstate commerce. It is stated on high

scientific authority that the purity of the milk supply of the state will never be insured till such an inspection is established, because only by the inspection of every cow slaughtered can health officials trace tuberculosis to the herds affected.

"The federal authorities, according to their own figures, are now able to inspect only five-eighths as many head of various kinds of stock as were slaughtered in the year 1900, when the latest census records were made.

"It appears that establishments which had been free from inspection, and had thus an opportunity to cultivate a trade which proper inspection would have excluded, killed nearly three times as many diseased cattle as the slaughter houses which had been subject to federal inspection. These figures point to what is believed to be the condition in the slaughter houses which are not now under any proper inspection, and into which tuberculous and other diseased cattle are being dumped.

"Practically no attempt has been made by this state to exercise its police power for the preservation of health by preventing the sale of diseased meat. The Board of Health of New York City pays some attention to the inspection of meat, but with one inspector detailed to a large number of establishments, at all of which slaughtering is going on at the same time, it is impossible for this inspection to be much more than a farce."

DR. GEO. R. WHITE HONORED.—To the truly scientific mind human and animal medicine are inseparable, although the practice of each is arbitrarily divided into separate and distinct professions. It is, therefore, not at all strange that members of one profession should enter the domain of the sister profession for the purpose of broadening their knowledge and for the advancement of medical science from a comparative viewpoint.

There have been a number of notable instances of M. D.'s taking up the study of the veterinarian and of members of our profession studying human medicine. One of the most recent among veterinarians who has graduated in human medicine as

well as in veterinary medicine, to receive recognition and honor from the sister profession is that popular and loyal veterinarian of Tennessee, Dr. Geo. R. White, treasurer of the American Veterinary Medical Association. It is with much pleasure that the REVIEW notes that Dr. White has been elected a member of the Nashville Academy of Medicine, a member of his city, county and state medical societies and of the American Medical Association, notwithstanding the fact that he does not contemplate the practice of human medicine.

Those who know Dr. White's strong traits of character and his zeal and love for the veterinary profession, know without being told that he will always be a veterinarian in preference to anything else. Instead of abandoning his first love he will now draw from his broadened field of knowledge for her enrichment and growth, while his generous nature will prompt him to contribute from his own specialty to the medical societies for the benefit of human medicine.

VETERINARY SCIENCE IN CURRENT LITERATURE.—“The Perils of Tuberculosis in Cattle and the Remedy,” is the title of an excellent article by our talented collaborator, Dr. D. Arthur Hughes, which appeared in the February number of *What to Eat*, the national food magazine, published in Chicago. Dr. Hughes seems to have the happy faculty of presenting in a lucid and comprehensive manner the latest and best that our science has to offer, in language and in style that is intelligible and interesting to the general reader. This is a great gift that few professional men possess. Those who possess it would do well to contribute articles to the leading popular magazines of our day. There is no end to the material within the domain of veterinary science that could be offered to the public for their enlightenment and edification, if it was done in an able and happy manner. There is nothing that would do more to remove popular prejudice against our calling and elevate the profession in the public mind than articles written in a popular style on subjects that concern the public welfare. W. H. L.

ORIGINAL ARTICLES.

MILK AS AFFECTED BY STABLE PRACTICES AND SUBSEQUENT HANDLING.

BY M. H. REYNOLDS, *Professor of Veterinary Medicine, University of Minnesota.*

Read before the American Veterinary Medical Association at its 44th Annual Meeting.

The quality and wholesomeness of milk is a matter of such fundamental importance that surely no excuse is needed for presenting it here. The enormous extent to which it is used as a food for children and even adults; the extent to which it is used as food for growing calves and other live stock; the ease of infection, and the fact that disease germs multiply readily in it, using it as a nutrient material; the comparative ease of producing wholesome milk and the grave dangers from bad milk all emphasize the vast importance of the subject, and the necessity of wholesome milk of good quality. We do not realize the importance of milk and its products as food materials; few of us realize actually and clearly the great importance of having it clean and normal; and few realize how very dirty and unsafe clean looking milk may be.

It has seemed to me while planning this paper that the thing most needed was not something profoundly technical or over scientific, but rather something to remind us of things which most medical men already know—which all of us should know.

Recently the writer came across an interesting record of three cases of infectious enteritis in the human from milk contaminated with the excreta of a cow, also an outbreak of scarlet fever which was traced directly to milk. There are plenty of instances of this kind for one who cares to pursue the study. Such things are naturally suggestive to medical men. Outbreaks of typhoid, diphtheria, ptomaine poisoning and various other diseases traceable to cows' milk are reported in our medical journals.

METHODS OF POLLUTION.

Under very common conditions and methods of milking there is practically always more or less pollution. This comes from dust in the atmosphere, which may or may not be carrying pathogenic bacteria. It may come from dairy cows; it may come from dirty hands of the milker; or from the clothing of milkers; or from milk utensils that have not been properly cleaned. Milk in transit is exposed to possible multiplication of germs from unclean containers and high temperatures. Bacteria of innumerable varieties, and other foreign matter may have been left in vessels from previous use, and bacteria multiply with great rapidity. Contamination may occur in the city milk shop, in the creamery, and in a variety of other places. In the city, milk is exposed to contamination from filthy street dust; to contamination from dirty hands or clothing of the handlers, or from impure ice or impure water used in diluting or washing.

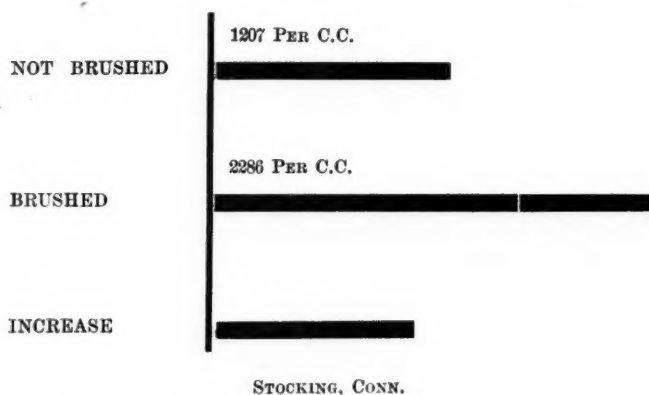
Bacteria in Air.—For the purpose of comparison it may be interesting to study the prevalence of bacteria in free air from an open field or meadow with that taken from barnyards and stables, as presented in Bulletin 91 from the Illinois Experiment Station. A large number of agar petri dishes were exposed in open field and an average of 43 exposures gave but .9 of one colony. Fifty per cent. of the plates were sterile. Of 51 exposures made in the barnyard, 12% were sterile and the average was 13 colonies per plate. Exposures made in stables under various conditions ran as high as 858 colonies per plate and as low as 2, depending on how dirty the stable, how much dust and in general what was going on in the stable.

In one experiment comparison was made between the bacterial condition of the air when the barn had been emptied, with doors and windows shut for three hours, and conditions in the same stable after the cows had been let in and feeding and sweeping had been done. When the barn had been emptied and quiet for several hours, an average of six exposures gave but half a colony per plate. This means that the dust particles had settled

and there were no air currents to stir them up again. After the cows had been replaced in the stable and the usual stable operations had been gone through with, the bacterial count per plate average 151 colonies and ran as high as 412, showing the effect of handling dry food and sweeping,—things which should not be done during milking nor for a considerable period before milking.

A little later, after 15 cows had been brushed by two men, two exposures gave an average of 858 colonies per plate. It is clearly shown in the work done by this station that dust freed by brushing cows contains twice as many bacteria as that from hay or bran.

BACTERIA IN MILK BEFORE AND AFTER BRUSHING.



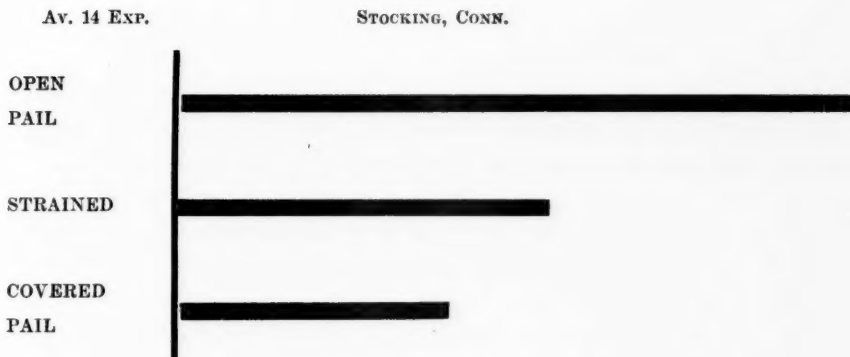
Unexpected Effect of Brushing Udders and Flanks Before Milking.

In another series of experiments, plates were exposed under the udders of cows, some washed and others unwashed. The average number of colonies developing in the plates exposed under washed udders was 192, and under udders that had not been washed 578. In this experiment 420 petri dishes were exposed so that the work was done on a sufficiently large scale to be reliable.

Another interesting experiment, if not an agreeable subject for consideration, was in a study of the amount of dirt which

falls into milk during the process of milking, comparisons being made by weight. Seventy-five tests were made. The udders were divided into three groups: apparently clean, moderately dirty, and muddy. The average amount of dirt from the muddy udders, unwashed was found to be about .88 of a gram. From the udders slightly soiled there was about .13 of a gram. From the apparently clean udders about .01 of a gram. The unwashed udders gave from $3\frac{1}{2}$ times as much dirt with the clean udders, to 90 times as much dirt with the dirty udders as the washed. The author of this bulletin concludes that by far the greatest amount of contamination comes from the udder, under ordinary conditions of milking.

DIRT IN MILK.



Covered Pail Unstrained Milk Much Cleaner than Open Pail Strained Milk.

Note the Large Amount of Dirt in the Open Pail Unstrained Milk.

Bacteria in Milk.—The number of bacteria in milk just drawn varies greatly in the estimates of different authorities, but in general we may say ordinarily from 200 to 100,000 per c. c. of milk, depending upon cleanliness of cow, milker, utensils, air currents, dust and other conditions.

Dr. Marshall is responsible for the statement that a single clean hair may have upon its surface from 50 to 3,000 bacteria, and a dirty hair may have almost any number above this, and

that a dirty hair falling into the milk pail may furnish bacteria by thousands or even millions. Imagine then a dozen or several dozen hairs falling into a single pail from a dirty udder.

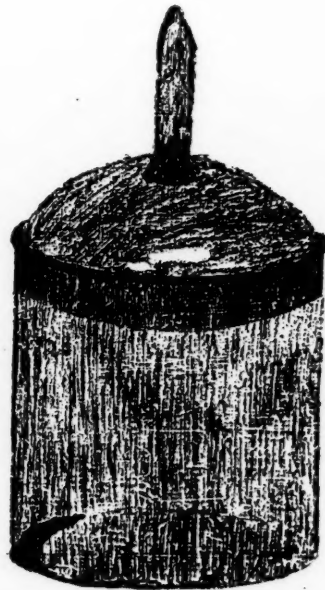
The Storrs Conn. Experiment Station has recently issued a bulletin on the "Quality of Milk as Affected by Common Dairy Practices," wherein certain important points are very wisely emphasized and the results of some very important experimental work is given.

DIRT IN MILK.

UDDER DIRTY—FRASER.



BEFORE WASHING.



AFTER WASHING.

Dirt in Milk from Udders Previously Dirty. Washed and Not Washed.

The first experiment reported was in connection with the custom of giving dry feeds at milking time. It is safe to say that this may be considered objectionable from the practical dairy-men's standpoint as well as from the standpoint of the sanitarian. It is very easy to understand that all dry feeds are liable to contain considerable dust or at least to stir up dust in the pro-

cess of handling. Some are liable to be covered with mold spores. Dust is very apt to be laden with a wide variety of germs, some harmless, others objectionable.

In the experiment detailed in the bulletin just referred to, ten cows were used and were divided into two equal groups, one group being milked before feeding and the other after feeding. Dry hay and grain were used in this experiment. The Stadmueller covered pail was used and of course the amount of dust and number of germs getting into the milk from the atmosphere would be very much less than had ordinary open pails been used. The two groups of cows were changed each day to avoid errors which might otherwise have arisen. Milking was done by the same man and all conditions, except the time of feeding, were as nearly identical as possible. The hay is reported to have been of good quality and not especially dusty. It was delivered through a chute from the floor above into a feeding alley, and fed without unnecessary handling or shaking. The grain used consisted of bran, cottonseed and gluten. This was taken from a chute and delivered along a feeding alley to the cows. The results of the experiment are interesting, especially when we remember that milk-souring germs, milk-peptonizing germs and disease germs, if present in the atmosphere would be distributed to the two samples of milk in about the same proportion as the harmless bacteria. The average number of bacteria in the milk taken before feeding was 2096 per c. c., while the average for the milk taken after feeding is 3,506, a difference in favor of feeding after milking of over 1,400 per c. c. Bearing in mind that a c. c. is approximately one-fourth of a teaspoonful, you will see that the difference is very considerable. Had this milk been received in an open pail, kept warm, and shipped 50 miles to market or hauled about town several hours in a milk wagon in July, the difference might have been multiplied indefinitely.

In making a special study of the different varieties of bacteria falling in milk in this experiment, it was found that the number of acid-producing bacteria was uniformly and decidedly

in favor of the milk drawn before feeding and the same held true for liquefying or peptonizing bacteria.

Another similar experiment was in connection with the feeding of dry corn stover at milking time. The conditions were about as in the preceding experiment, except that two cows were used instead of ten. One of these cows was milked before feeding and the other after and the cows were alternated day after day in order to avoid error. The corn stover is reported to have been of unusually good quality and as containing a comparatively small amount of dust. The stover was fed in about the same way as the hay previously mentioned. Attention is called to the fact that the stover was put down the chute to the feeding alley one or two hours before feeding time so that a considerable amount of the dust must have settled before milking.

The average number of bacteria per c. c. in milk drawn before feeding stover was 1,233, and for the milk samples drawn after feeding 3,656, a difference of 2,423 per c. c. more in milk drawn after feeding, or about three times as many. This and similar experiments would have a special significance if stover used should be moldy. In that case the atmosphere would be filled with innumerable mold spores in addition to the usual dust carrying bacteria.

A third experiment was one in which milk from cows whose udders were wiped with damp cloth at the time of milking as compared with others whose udders were not so cleaned. In this experiment again there were used two groups of cows, five in each. One group was milked without any unusual care to avoid dust or dirt,—just ordinarily clean, dry milking. The other group had the flanks and udders wiped with a damp cloth, and the groups were reversed daily. The milking was done by the same man and the Stadmueller covered pail was used. The average number of bacteria per c. c. from the cows whose udders were wiped was 716, the average number from those not wiped 7,058, a decrease probably due to the damp wiping of 6,342 bacteria per c. c., or a decrease of 6,342,000 per gallon. These were not all disease-producing bacteria by any means, nor were they

all bacteria capable of producing objectionable changes in milk. Many of them were milk-souring bacteria, others belonged to the group which produces liquefying changes in the milk. Some may have been infectious disease-producing bacteria. Attention is called in this bulletin to the fact that all of the cows used in this experiment were at an agricultural college and were kept much cleaner than would be the case in an average dairy barn, so that if milk from the udders of cows kept in an average city dairy for instance, should be compared with the milk from cows whose udders and flanks were reasonably clean and then well wiped with a damp cloth, the difference would be startling.

BACTERIA IN MILK.

7058 PER C.C. [REDACTED]

COWS NOT WIPED

716 PER C.C. [REDACTED]

WIPED

6342 PER C.C. [REDACTED]

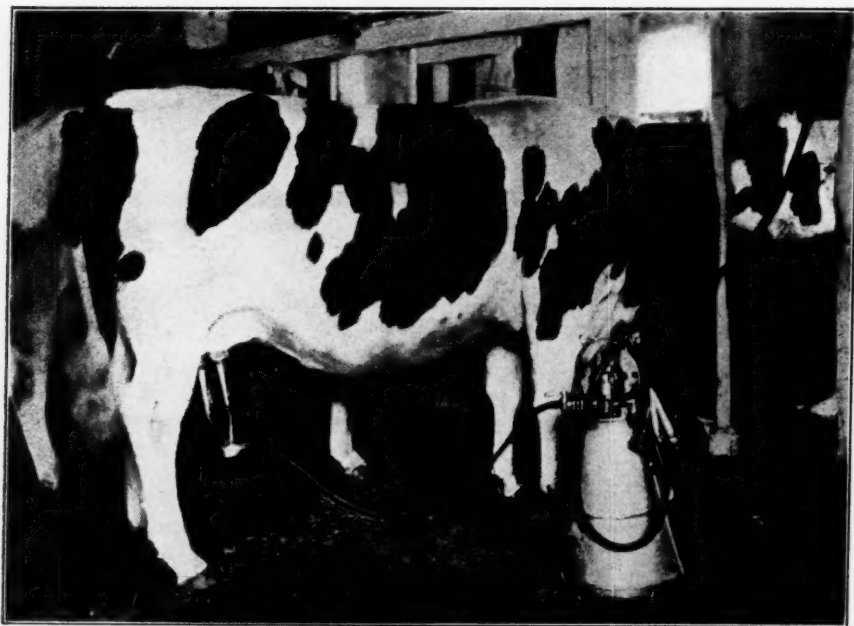
DECREASE

STOCKING, CONN.

Effect of Wiping Udders and Flanks with Damp Cloths Before Milking.

A further experiment was done at the Storrs Station in an effort to secure information concerning the effect of brushing cows at milking time. It is not an uncommon practice among dairymen to brush cows before milking for sake of cleanliness, so this presents a study of a very practical feature. A study of their results shows that there were uniformly many more bacteria in milk from cows that had recently been brushed than in milk from cows not so brushed, or as in this case those milked before brushing was done. The explanation is very simple and the results are just what one might expect. Brushing the cows merely freed considerable quantities of bacteria laden and very objectionable dust. Some of this dust fell into the milk.

This same station has also demonstrated in a very practical and intelligent way that the individual milker has very much to do with bacterial cleanliness of milk. In one experiment five college student milkers were compared with two regular men milking in college stables, but not having had special instruction. In this work the students milked five cows and put their milk in a certain can. The regular men milked five cows and put their milk into another can. A sample of milk was taken from each



MILKING MACHINE.

Milking Machines now seem to give promise of practical work and the possibility of greater cleanliness.

can and tested for the bacterial content. The students had previously some instruction concerning dairy bacteria and concerning clean methods of milking, but both parties of milkers followed the same routine. The flanks and udders of the cows were wiped with a damp cloth by both groups of milkers and the Stadmueller covered pail was used. The average bacterial count per c. c. for the students was 914, and for the regular men 2,846—

three times as much—or a difference of 1,932 per c. c. In some individual cases milk drawn by regular men showed more than nine times as many germs as that taken by the students.

Another similar experiment is even more suggestive. The same two regular milkers were compared with a graduate of the college who had charge of the dairy herd. In each of these latter experiments the graduate milked five cows and the two regular men milked another five cows. The regular milkers attempted at least to follow the same routine as the graduate, having been instructed somewhat concerning the procedure. For both groups of cows, the udder was cleaned presumably by a damp cloth, and the reader may infer that a covered pail was used. The average for 19 experiments in the test now under discussion shows that the milk drawn by the college graduate contained 2,455 bacteria per c. c., while under similar conditions the regular milkers obtained milk containing over 17,000.

In view of this prevalence of dust in dairy stables, and the greater or lesser prevalence according to methods of feeding and stable practices in general, and the fact that dust particles are usually bacteria laden, it becomes a very interesting study—if one offers the query what if these dust particles are carrying considerable numbers of the pigment forming bacteria which produce red milk, or yellow milk, or green, or blue milk?

Or, suppose that these dust particles are loaded with yeasts and various species of bacteria capable of producing alcoholic fermentation, or are loaded with Hueppe's lactic acid bacteria, or some of the numerous species of bacteria capable of producing butyric acid fermentation with its disagreeable odor?

Those who are at all familiar with this subject know that there are numerous bacteria capable of peptonizing milk casein and leaving a wholly or partly clear watery fluid instead of good sweet wholesome milk.

These dust particles may also be carrying considerable numbers of the micrococcus, which produces bitter milk; or specimens of the numerous varieties of bacteria which may produce slimy

or ropy milk, or those which produce soapy milk, or infinitely worse than any of these, bacteria which are capable of producing intensely active poisons like tyrotoxine.

Apparently we are justified in concluding that dry feeding at the time of milking or immediately before, very greatly increases the bacterial content of the milk and impairs its keeping quality. In addition to that a considerable portion of the dust at least must be considered as filth rather than ordinary dust. It is also evident that the simple procedure of damp wiping or washing a cow's udder and flanks, especially if she be reasonably clean before, very greatly improves the cleanliness and presumably the keeping quality of the milk, and it is clearly evident, so far as a limited experiment can demonstrate, that brushing cows at milking time is decidedly objectionable.

Dr. Marshall estimates that the dirt usually found upon a cow, or about the stall, or on dirty clothing of the milker may contain up to 80,000,000 bacteria per gram of dirt, and that 50% of the dirt that falls into the milk is soluble, and of course cannot be strained out or otherwise removed under ordinary conditions.

Backhaus is quoted as estimating that the people of Berlin swallow 300 pounds of this kind of filth per day, or about 54 tons a year. The amount that is consumed by the people of our own cities may properly become a subject for unpleasant conjecture.

It is not well enough understood that one of the serious sources of milk contamination is from dirty pails and other utensils, and that good milk cannot be put on the market from a dairy that is not scrupulously and intelligently clean in this respect. Dr. Marshall reports from 500,000 to 50,000,000 germs per gram of dirt taken from creases in the milk pail, and many thousands from each inch of the inner surface.

In the course of some recent experimental work with manure from tuberculin reacting cows at the University of Minnesota Experiment Station, we have found one cow that gave very virulent feces as shown by guinea pig inoculations. We found another cow that gave enormous numbers of an acid fast bacillus,

comparing closely in every way with the tubercle bacillus, but which unfortunately was not tested for virulence. However, this cow was known to be tuberculous and had what was supposed to be a tubercular diarrhea. Imagine what could have easily happened with either or both of these cows in an average city dairy with manure smeared on the tail, thence on the udder and flanks, and some one sits down to milk after it is dried.

Dr. Repp reported a very interesting case of a tubercular cow in a paper before the A. V. M. A., in 1903, where tubercle bacteria occurred in the intestinal mucosa in enormous numbers and in smears from the surface of this membrane. Imagine this cow in an ordinary dairy or a cow with tuberculous ulcers on the intestinal mucosa. To make such cases a serious consideration it is not necessary to suppose that the manure becomes smeared on the udder or flank, although this would almost certainly occur. Suppose that it becomes dried on the floor and particles float up in currents of air as ordinary dust. Animals are moving around in the stables, milkers are walking about; here and there doors and windows are open and dust flies, settling in milk pails or upon food soon to be given cattle. In this connection we see the serious importance of such considerations, as those just presented in the work quoted from the Connecticut Station.

Tuberculous cows may unquestionably cough up then swallow infectious material, and excrete tubercle bacilli in the manure. In a work recently reported by Schroeder and Cotton of the Bureau of Animal Industry (Bulletin 88), evidence on this point is given. Cattle were given virulent cultures in water and fed heavily on corn so that considerable quantities of corn would appear in the manure. This was thrown over into an experimental pig pen to four hogs. You will see that this is an experiment bearing upon the common practice of allowing hogs to follow steers, which may not be objectionable if the steers are not tuberculous. Three out of four hogs became infected in this way. In another experiment the manure from cattle known to be tuberculous was put in an experimental pen of four hogs and one be-

came tuberculous. The possible danger of tuberculosis coming through milk cannot be disregarded.

For the physician practicing in a dairy district there is an important suggestion in the fact that hogs are very susceptible to tuberculosis by ingestion. Creamery skim milk in States where there is no law compelling pasteurization, may thus easily become a serious source of tuberculosis among hogs. But the infinitely more serious suggestion is that tubercular bovine fœces may possibly contaminate milk intended for human food. Authorities like Von Behring are now insisting that infection in the human usually comes by ingestion, and that in very early life; i. e., at a time when milk is the exclusive diet.

Cleaning Utensils.—It has been demonstrated by careful and apparently competent experiment, that thorough cleaning of the separator may reduce the bacterial content of milk to one-fourth or one-fifth of that found in milk which has passed through a separator not thoroughly cleaned. Passing milk through a dirty separator is not unlike passing milk through a dirty strainer. The innumerable bacteria in the dirt and slime accumulating in a separator not well cleaned, may in turn contaminate to a serious degree the next and future lots of milk passing through it. There are various methods of washing and cleaning milk containers. Proper washing implies very free use of a good brush and plenty of warm water, followed by thorough washing with sal soda or good alkaline washing powder for getting rid of the fat; then thorough rinsing with boiling water, and a good steaming with live steam, and we have a vessel in which it will be possible to keep clean milk,—milk fit for human consumption. The separator should be well washed every time it is used and to do thorough work all parts coming in contact with milk should be brushed, using 5% borax or any good alkaline powder and then be rinsed in hot water or steam and allowed to dry,—but no soap.

SOMETHING DUE FROM THE CONSUMER.

There is another side to this question—the producer's side—which we must not forget. People must be made to realize the

difference between good milk and bad milk, and to be willing to pay for good quality and cleanliness. It takes an intelligent man and a considerable amount of executive ability and agricultural knowledge to produce clean, wholesome milk. It is more expensive to produce milk of this kind, and we must be willing to pay for it. Very cheap brains and very cheap stables can produce dirty milk. That is easy.

Minneapolis has recently had an experience which may be suggestive in this connection. One of our wealthiest men established an almost ideal certified milk plant. He had the best cows, thoroughly modern stables and a first-class milk plant in every respect. It was very much more expensive than necessary. The feeding and care of the cows, milking operations, cooling of the milk, sterilizing of bottle, bottling, etc., were all that could be desired, and the milk produced in this plant was unusually clean and free from bacteria. The average bacteria count was very low indeed. The milk was without a trace of animal odor; it kept splendidly and was delicious to drink. This man was conducting the enterprise—to some extent at least from purely philanthropic motives. If it had been appreciated by the people—even though it were not profitable—he would probably have been very well satisfied. Our people had not been made to realize the difference between clean milk and dirty milk. Our veterinarians, physicians, ministers, editors, and teachers had evidently not done their duty in educating the public, and a very large proportion of the people in Minneapolis could not see any reason why they should pay more for this milk than for the dirty milk that came to them from the average city dairies, and which would scarcely keep sweet in a refrigerator over night. Our plant was not appreciated and was discontinued.

CITY REGULATIONS.

Any efficient and practical municipal regulation should cover at least these features: viz., there should be a specific content of butter fat which should not be too high; no foreign material should be added for preservation, or any other purpose except

perhaps by a promising new method of preserving milk by the use of peroxide of hydrogen which is subsequently driven off by a degree of heat that does not change the quality or composition of the milk and leaves the milk with remarkable keeping qualities and without any of the peroxide or other foreign material left in it,—simply sterile normal milk. If any other method of preserving milk can be demonstrated as efficient, at the same time absolutely harmless and which will leave the milk normal, then of course it should not be prohibited by city regulations, inasmuch as it does not seem possible to have the milk pass from the cow to the consumer quickly enough so that the milk may be delivered in the best condition. However, as a general proposition

MULTIPLICATION OF BACTERIA.

BACILLUS DIVIDING EVERY 30 MIN.

BEGINNING WITH ONE ORGANISM.

$\frac{1}{2}$	Hour	2	"
1	"	4	"
$1\frac{1}{2}$	"	8	"
2	"	16	"
3	"	64	"
4	"	256	"
5	"	1024	"
24	"	17000000	"

Showing Why Milk Should go Promptly from Cow to Consumer.

the statement must remain for the present that milk should be delivered to the customer as normal milk without even the addition of water though the butter fat be above that required.

There should be requirement that stables and yard should be kept in good condition and that all reasonable precautions for obtaining clean milk be observed at milking time. Cattle giving milk for public or other food supply purpose, must be, in so far as can be detected, in normal health and free from disease which can be transmitted to people or live stock. All cattle giving milk for city supply should be tuberculin tested. Every facility should be offered and utilized to secure early delivery; in other words, the shortest possible time from cow to consumer. A small table

compiled by Marshall is submitted to emphasize this suggestion for prompt delivery:

Difficulties Encountered.—Minneapolis was one of the first cities in the United States, if not the first city, to adopt a tuberculin test ordinance, and St. Paul was very early in the list, so that we have had opportunity to follow this work in Minnesota for a number of years and to study results. A number of difficulties have appeared and some phases of the work are far from satisfactory.

There has been difficulty in securing disinfection of stables after tuberculous cattle were removed. It has been very difficult to impress dairymen with the importance of refilling their stables with tuberculin tested cattle. Our city health departments have been more or less hampered by inefficient employees, because they have been in some cases political appointees rather than men selected on account of fitness. There has been of course the usual difficulty of securing sufficient funds for sanitary work. It has not been possible to retest herds frequently enough to secure the best results. Difficulties have been discovered in the way of permanently marketing "tested" and "condemned" or "passed" cattle so as to avoid fraud.

With the State paying three-fourths of the loss to the owner, that is, three-fourths of the difference between the appraisal and carcass value, the Live Stock Sanitary Board is spending large sums of money. It has often caused the writer, as a member of the Live Stock Sanitary Board and responsible for the use of public funds, some uneasiness and caused him to wonder whether the expense was justified; whether we were getting value received for the State, and yet it is difficult to balance human life or public health against a mere dollars and cents account with the State Treasury. There has been great difficulty for those managing city work to have milk from tested cows only. Mr. A. has his herd tested, cows react and are taken to South St. Paul for slaughter. He replaces these with other cows which as a rule have not been tested and these give milk for the public until

the next test, which may be months or a year later. However, the Sanitary Board has, during the past year, kept a veterinarian at South St. Paul partly for this purpose and our city dairymen may now buy tested cows.

On the other side of the question there is satisfaction in the thought that a very large number of tuberculous cows have been killed, some of which must otherwise have been infecting people and spreading disease among cattle.

The question, already old, as to whether human and bovine tuberculosis are identical and intertransmissible need not concern us seriously in this discussion. Since Koch delivered his memorable address, a whole army of veterinarians, bacteriologists, and pathologists have been working at the problem. Now that the smoke of battle has lifted it is quite evident that there are left on the field the two parties; one holding that bacilli of bovine and human origin present with reasonable uniformity, differences which justify their division into distinct races. The other party holds that there are no important, uniform differences which may not be accounted for by differences in environment. Both parties agree—and this is the kernel of the whole matter, the most important point in the whole discussion—that man is susceptible to tubercle bacilli of either human or bovine origin, and that those from the bovine are distinctly more virulent, so that when milk is exposed to infection from stable tuberculosis, the situation becomes serious for the consumer whether Dr. Koch was right or wrong concerning the point of identity.

GENERAL CONSIDERATIONS.

Milk must not only be clean and kept in clean vessels, but it must also be cooled promptly to check multiplication of bacteria and must reach the consumer in the shortest possible time.

Those who are especially interested in this subject will find some very interesting reading in Vaughn and Novy's "Ptomaines and Leucomains." In one instance there cited 54 persons were made very seriously sick after drinking a certain sample of milk.

The trouble was traced to a dealer who furnished the milk, then to the farm from which it came, and study was made of the conditions under which the milk was produced and delivered. The cows were in good health and well fed, but were milked at rather unusual hours, at midnight and at noon. It was the noon milking which alone caused the trouble. This was poured while hot into cans and was then, without cooling, hauled eight miles during the warmest part of the day and in the hottest month of the year to the city dealer.

Such cases of poisonous milk are usually associated with undesirable methods of handling the milk, so that either filth had carried the poison-producing bacteria or that they had gotten into the milk in less objectionable ways and have there developed under conditions to which milk should never be subjected.

Diphtheria, scarlet fever, typhoid, tuberculosis and various other diseases have been traced with reasonable certainty to milk and it should be remembered in this connection that persons handling milk are generally to blame for these outbreaks. Persons affected with any contagious disease should not handle milk vessels or milk intended for human consumption. Authorities differ on many points, for example as to whether milk from the depths of a normal udder is germ free, they differ as to whether the bacterial count tallies with the amount of dirt; they differ on the significance of the number of bacteria per cubic centimeter, but they all agree on the fundamental importance of health and cleanliness for the cow, for the milk, for utensils; freedom from dust, and air currents in the stable; prompt cooling and quick marketing.

Expensive dairy plants are not necessary for the production of clean milk or for high dairy efficiency.

It is important to realize that clean milk has wonderful keeping quality,—keeps wonderfully well if it is properly handled and clean enough. Promptly cooled and properly handled milk that changes rapidly is dirty milk, bacterially and presumably chemically and mechanically also.

At the National Dairy Show held in Chicago, February, 1906, milk was inspected under three classes, certified milk, market milk, and cream. This milk was produced February 12, packed in ice, and scored on February 15. The showing was as follows:

Bacteria	Milk kept sweet (cold)
Certified milk, 0 to 51,000 per c. c.	(after) five weeks
Market milk, 400 to 21,000,000	one week 50 F
Cream, 0 to 2,810,000	seven weeks

Think of it, normal milk sweet after five weeks and kept so by nothing more than cold and its own cleanliness. Most people living in cities and purchasing milk have considerable difficulty to keep it sweet for 24 hours, and often it sours in 12 hours—even when kept in a refrigerator. Mr. Gurler had normal milk on exhibition at Paris—sent from this country. His milk kept sweet long enough for this purpose—merely because it was clean and cold.

The certified milk winning the gold medal was produced in a stable which may be described briefly as having a single story, concrete sides, plastered ceilings, concrete floors, individual watering device and a good system of ventilation. The foremilk was discarded. The milk was received in a covered sanitary pail, taken promptly from the barn, cooled and bottled as soon as possible.

The stable in which the milk winning the silver medal was produced as somewhat similar: a basement barn with concrete floor, well lighted and well ventilated, equipped with modern dairy utensils. After securing the milk it was passed over a cooler, bottled and put on ice.

The comment concerning the market milk winning gold medal was that the barn is well lighted and ventilated, and had cement floors. The walls and ceiling were kept whitewashed, and the manure was hauled directly to the field. Special care is taken to avoid dust in the stable during the time of milking and the cows are kept clean.

We need to realize that good, clean, normal milk is about the most important single article of diet in the whole list, practically indispensable.

We need to realize also that milk may appear clean and be very dirty, and to realize that milk may be mechanically clean and bacterially very dirty and that dirty milk is unsafe milk.

YOUR journal gets better every year, and I do not see how anyone of the profession can afford to be without it for three times the price.—(*W. T. Stroud, V. S., Larned, Kan.*)

WOMAN PAYS \$125,000 FOR STALLION.—The English thoroughbred stallion, Cyllene, has been purchased for \$125,000 by Mrs. Chevallier, proprietress of the Ojo del Agua stud at Buenos Ayres, Argentine Republic. It was this woman who paid \$80,000 for the stallion Pietermaritzberg, which died on January 6, and Cyllene has been bought to replace him. The Ojo del Agua stud is regarded as one of the most successful studs in the world.

COST OF TICK ERADICATION.—Congress appropriated \$150,000 for the work of tick eradication during the fiscal year 1907-8, and it is estimated that \$50,000 additional will be needed to complete the work of the fiscal year 1908. \$250,000 will probably be asked for the fiscal year 1908-9. The chief of the Bureau of Animal Industry estimates that this amount of money could be advantageously and judiciously expended, and that the great benefit which would accrue to the cattle industry of the South, and incidentally, to the country at large from the success of the work abundantly justifies the appropriation.

CHICAGO'S wholesale trade in horses last year was about \$15,250,000; in carriages and wagons, \$12,600,000; in harness and saddles, \$8,200,000; in automobiles, \$4,900,000. With totals for the horse and his equipment exceeding \$36,000,000, or seven times that of the automobile trade, it must be admitted that the horse is still a long way ahead. And the worst of it is that the motor vehicle does not seem to be catching up very fast. Its trade in Chicago made no gains last year, according to the *Tribune's* annual review, while the horse-drawn vehicles gained \$2,100,000, or nearly 20 per cent.—(*N. Y. Herald.*)

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

BY D. ARTHUR HUGHES, PH. D., D. V. M., INSPECTOR, SUBSISTENCE DEPT.,
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Good fortune sometimes pursues a man, sometimes associations of men. A man may well be pleased to wear the hat of Fortunatus. How much the more should an association of men take pleasure in fortuitous circumstances! Such good fortune has befallen the American Veterinary Medical Association for the year 1908, in the happy coincidence that the International Congress on Tuberculosis opens in Washington the same month, September, that our association convenes in Philadelphia.

When the executive committee decided on Philadelphia for the annual assembly in 1908, they had in mind the peculiar felicity which the occasion would have from our professional point of view, and this had governance over them in their choice. Nor will they be mistaken in their judgment. Enthusiastic as are the Kansas, Missouri and Nebraska veterinarians, and as great a following in their enthusiasm as they have in the whole profession of the whole Central West, which resulted in the unusual success of the Kansas City convention, they have peers in the noble state of Pennsylvania, who will compete with them in a friendly rivalry to make the Philadelphia assembly require description as a brilliant chapter in the veterinary history of the United States. That city, the first capital of the country, where Independence Hall (if Faneuil Hall, Boston, is "the cradle of liberty"), was the place whence came the stimulus which gave the youth of liberty its prodigious strength—the home of the many-sided Franklin, writer, legislator, diplomat, inventor, founder of the University of Pennsylvania—yes, that city has had much to do with institutional history, particularly political history, in this country. Let it have as much to do with the making of veterinary history. From the veterinary viewpoint alone the circumstances are propitious which call us to Philadel-

phia at this time, so that our fondest hopes are capable of realization. The Pennsylvania Veterinary Medical Association, just about to reach the buoyant twenty-fifth year of its young manhood, wishes us to celebrate the event with them and to look upon the stately buildings of the Veterinary Department of the State University, erected at a cost of \$350,000, which are to be completed by the summer of 1908. Truly, an auspicious occasion! That man is dull indeed who cannot see that it augurs much for the impress of the University of Pennsylvania upon future veterinary progress in this land. The tongue of an orator cannot remain mute under the inspiration of such events. A man with lively intellect, with the gift of public speech, with palpitating emotions which are keyed to the hour, like President Dalrymple, cannot but give utterance to the general enthusiasm—an enthusiasm which will overflow in other moving speeches, lively discussions, miscellaneous papers, wise resolution or legislation.

If this were the only good to be gained by the trip to the eastern coast in September, 1908, the journey would have more than a par value in the intellectual stock obtained. But the trip would bear compound interest if, to the visit to Philadelphia, were added a trip to Washington to attend the triennial sessions of the International Congress on Tuberculosis, which, by extraordinary good luck, opens in the capital the latter part of September of the same year.

No man among us but remembers the International Conference on Tuberculosis in London in 1901, when Robert Koch, the discoverer of the etiology of tuberculosis, astonished the world with his declaration that there was no such thing as the transmission of bovine tuberculosis to man, nor of human tuberculosis to the domesticated animals, consequently there was no danger to be feared from the milk and meat of tuberculous animals. This single event illustrates the bearing of International Tuberculosis Congresses on world interests. In a paper written for this journal, January and February, 1904, under the caption, "Robert Koch and His Critics," occasion was taken to uncover

most of the errors in Koch's doctrines, and to bring forward arguments from authors in every clime against his dictum. The world's congress of scientists in London, 1901, interested in the study of tuberculosis, passed a resolution running counter to Koch's doctrines. Subsequent research into every ramification of thought touching Koch's dogmas have only solidified scientists of the world against his announcement of 1901. No small part of the scientists opposing him, with a sincere regard for the hygienic interests of their particular peoples, are the leading veterinarians of France, Great Britain, America, yea, more, of Germany itself. If this world-question were settled and there was unanimity of opinion of scientists upon it, the International Congresses on Tuberculosis might for us be tame. Instead of that the question still burns at a white heat. It has come up with renewed gladiatorial activity on the part of scientists on both sides of the question at each successive congress. It will come up, along with the von Behring question, in Washington. What are the opinions of our leading sanitarians on the question is certain; what will be the ultimate destiny of the question is equally uncertain, though it behooves every veterinarian to remember its seriousness and to safeguard the public interests involved in it according to his knowledge, his convictions and his conscience.

Since, then, good fortune permits American veterinarians to attend this year the International Congress on Tuberculosis, which is to be held on our own soil, we may ask ourselves, first: what an international congress on tuberculosis means; and, second, what opportunities this particular International Congress on Tuberculosis offers?

1. What an International Congress on Tuberculosis means.

Previous to 1901 there had been sporadic "conferences" on tuberculosis, sometimes annual, sometimes not, held in one capital or another of Europe and attended by scientists interested in the disease. In 1901, however, at the International Conference, held that year in London, an organization was perfected to bring

into one society those who were combatants in the warfare against the disease, the crusading hosts of all kinds, in all lands—the forces of the state, emperors, kings and princes; the forces of governmental administration, whether of a nation, principality or municipality; the forces of philanthropy, rich benefactors, hospital and charity workers; the forces of clinical workers, whether in private practice or in public asylums; the laboratory workers, veterinarians, nurses and business men. The organization perfected calls for an assembling in some one country, by the courtesy of the national organization against tuberculosis in that country, of all members belonging to the International Congress on Tuberculosis, whether they are citizens of that country or another. The International Congress is a movable society assembling every three years in a different country. In 1902 the congress opened in Berlin, in 1905 in Paris, while in 1908 it will open in Washington.

The meaning of such an organization is concretely illustrated in an account of the International Congress, held in Paris.

This, the last congress of the kind, assembled in the French capital from October 2 to 7, 1905, with Dr. Hérard as president, and Dr. Chauveau, Director of the National Veterinary Schools of France, and Prof. Brouardel, as vice-presidents. According to Dr. Letulle, secretary-general of the congress, the French Republic granted \$20,000 to facilitate the propaganda that year, in the meeting of the congress, against tuberculosis. Delegates were present by appointment of the governments of thirty-three countries. There were 3,500 enrolled as active members and associate members of the congress; 1,500 exhibitors of tuberculous specimens; 800 communications or papers received from individual members.

The general plan may be summarily spoken of under three heads: that for speaking and papers, the exhibition, the social and recreative part.

As a working body for speaking and the hearing of papers the congress was divided into four sections representing four

sides of the work against tuberculosis; all four sections meeting at once in separate rooms at the Grand Palais. Each section, during the week, had seven meetings and 250 papers were read. Readers of papers or speakers were active members of the congress who had paid their fee of twenty-five francs. The exact title of papers, and the summary of each not more than twelve lines long, were required to be sent in before the congress met. These, title and résumé, appeared in the programme and were distributed at the meetings. Members received the following—a volume containing all addresses or discussions on fifteen questions of primary importance; a summary of all addresses in three languages (German, French and English) for distribution before the first meeting of the congress; a guide giving full information on the prevention of tuberculosis in France; a catalogue of the tuberculosis museum and the tuberculosis exhibition in the Grand Palais; finally a volume containing the transactions of the society.

To strongly emphasize the pathological, industrial, social and historical sides of the struggle against tuberculosis there was an exhibition of specimens and materials during the whole of four weeks of October. These exhibits came from the four corners of the earth.

Nor were tributes to great scholars, nor the recreative part of the congress forgotten. Dr. Hérard entertained all the members one evening in the Hotel Continental. M. Loubet, the President of the Republic, invited 120 of the representatives of the governments to a dinner at the palace of the Elysée. The city council received all the members at the Hotel de Ville. The paper, *Le Matin*, gave a fête in their honor at the Théâtre Chatelet, where the entertainers were distinguished members of the opera. The congress ended with a grand banquet at which 600 members sat at table. Thus the feasts of reason and flow of soul in the intellectual part of the programme were closed with a gala night of a character truly French.

The staidness and quiet pageantry of the opening of the congress made a great contrast with the loud gayety of the close. It may serve to suggest what will occur when the congress convenes in Washington, so it is worthy of record here. It occurred at 2 p. m., October 2, 1905, and was devoted to speeches by delegates to the congress from many of the 33 countries represented. M. Loubet, President of the Republic, sat on the platform in the main room of the Grand Palais, surrounded by the German, British, Spanish, Italian and American ambassadors, the venerable Dr. Hérard, president of the congress, several ministers of state, the general secretary of the congress, Dr. Letulle, the delegates of the foreign governments and the members of the French committee. After Dr. Hérard had spoken to the congress on what occurred at previous conferences between 1867 and 1898, at Berlin, Naples, London and Copenhagen, the foreign delegates spoke, namely: Surgeon General Dr. Schjerning (Germany), Dr. Theodore Williams (Great Britain), Professor von Schrötter (Austria), M. Béco (Belgium), M. Zoltovitz (Bulgaria), Dr. Espina d Capo (Spain), Dr. Bayer (United States), Dr. Hotyra (Hungary), Prof. Bicelli (Italy), Dr. Davel (Argentine Republic), Prof. Babès (Roumania), Dr. Rapchenski (Russia), Dr. Hansen (Sweden), Dr. Schmidt (Switzerland), and a representative of China. Then the secretary-general made his report and the congress was declared open by Dr. Hérard.

To the veterinarian two points, which indeed attracted much attention at this congress and occupied much time, are of vital importance: the sanitary question of the place of meat and milk in the transmission of tuberculosis, and Dr. Emil von Behring's announcement of a cure for the human form of the disease.

The first question, that of the inter-transmissibility of bovine and human tuberculosis, occupied the minds of half of the congress, sections 1 and 2, for the most of the first day, October 3, 1905. In the second section, for instance (surgical pathology), the time was given to a discussion on "The Comparative Study of the Various Forms of Tuberculosis," by the French, German and American delegates.

Dr. S. Arloing, the eminent professor in the National Veterinary Schools, at Lyons, came to the following conclusions:

1. Human and bovine tuberculosis were of the same nature and were inter-transmissible.
2. Types of tuberculosis described by some bacteriologists were in reality only varieties of the disease. These varieties were produced by an exaggeration of varying phenomena and pathological changes which the bacillus could produce in the same species of animals.
3. All varieties of the tubercle bacillus, which he described, might be agglutinated in various degrees by the serum of tuberculous patients.
4. All forms of animal tuberculosis must be regarded as dangerous to man.

Dr. Kossel, of Giessen, came to the conclusion:

1. Tuberculosis lesions could be produced in man by bacilli of the bovine type.
2. The flesh and milk of tuberculous animals are the mode of transmission of the tuberculosis of the bovine type.
3. This mode was uncommon compared to the transmission of the disease from man to man.

Dr. M. P. Ravenel, bacteriologist of the L. S. S. Board of the State of Pennsylvania concluded:

1. The division of mammalian tubercle bacilli into two types, human and bovine, had been amply confirmed. These types had cultural, morphological and tinctorial characteristics by which they might usually be recognized. The chief point of difference was to be found in the greater pathogenic power of the human type. Human bacilli, however, are met with that have low pathogenic power.
2. No other species of mammals had been shown to harbor a variety of tubercle bacillus as constant in its characteristics as to justify its classification as a third type.
3. Other species suffering from the disease received their infection from man or from cattle.

4. The human bacillus, as a rule, had a low pathogenic power for cattle, but cultures were not infrequently found which were virulent for the bovine race.

5. The bovine tubercle bacillus had the power of entering the human body and of producing the lesions of tuberculosis.

6. They were at present unable to state the exact proportion of cases in which bovine tuberculosis was transmitted to man, but in view of the evidence at hand they must regard the disease in cattle as the source of a certain part of human tuberculosis, and any relaxation in their laws and precautions against bovine tuberculosis would be unwise.

In section 1, of the congress, that on the "Medical Pathology of Tuberculosis," as appeared from the passwork speeches of Drs. von Behring, Vossel, Lydia Rabinowitsch and S. Arloing, October 3, 1905, the sentiment of the majority was clearly that bovine tuberculosis was a source of danger to man, more particularly children. The congress, therefore, by a large majority, passed the following resolution:

"The congress, after hearing the exposé of the most recent investigations, declares that it is not only indispensable to avoid contagion from man to man, but also to pursue the prophylaxis of bovine tuberculosis, and to continue to take administrative and hygienic measures to avert its possible transmission to our species, and finally, that it is desirable to be on our guard against all forms of animal tuberculosis."

The expectation might be that this enunciation of the opinion of the 1905 congress might be deterrent to the Koch school. The impression was given in the different countries that Koch was not to be taken too seriously. Indeed the British delegates, sent to the congress by order of King Edward VII., said, substantially, that Prof. Koch was given a quietus. None the less, the German investigator has not altered his opinion to which he gave utterance in the 1901 conference in London. After the close of the 1905 congress, in December of that year, he again braved the world by emphatic reiteration of his previous opinion. In the

Nobel lecture, delivered at Stockholm, December 12, under the title, "How the Fight Against Tuberculosis Now Stands," he said:

"Before addressing ourselves, however, to the answering of this question (how the contagion, tuberculosis, should be best combated), we must attain to absolute clearness as to the manner in which infection in tuberculosis takes place, *i. e.*, how the tubercle bacilli get into the human organism, for the sole purpose of all prophylactic measures against a pestilence must be to prevent the entrance of the germ of the disease into man. Now, as regards infection with tuberculosis, only two possibilities have hitherto presented themselves, namely, infection with tubercle bacilli emanating from tuberculous human beings, and infection by tubercle bacilli contained in the flesh and milk of tuberculous cattle. After the investigation that I have made, hand in hand with Schütz, on the relation between human and bovine tuberculosis, we may dismiss the second possibility, or rather at least regard it as so slight that this source of infection, as compared with the other, falls into the background. We arrived at the result that human tuberculosis and bovine tuberculosis are different from one another and *that bovine tuberculosis is not transmissible to man*. With regard to the latter point, however, I wish, in order to prevent misunderstanding, to add that, in saying this, I mean only those forms of tuberculosis that have to be taken into account in connection with the combating of tuberculosis as an epidemic disease—namely, generalized tuberculosis and above all, pulmonary phthisis. It would take us too far if I were to go deeper into the very lively discussion this question has given rise to; I must reserve this for another occasion. *On this head I wish only to add that the testing of our investigations, which has been carried out with the utmost care on a broad basis in the Imperial Office of Health in Berlin, has led to a confirmation of my opinion, and that, moreover, the harmlessness of the bacilli of bovine tuberculosis to man has been proved by the repeated inoculation of human beings with the material of bovine tuberculosis by Spengler and Klemperer. In connection with the*

combating of tuberculosis then, only the tubercle bacilli emanating from human beings have to be taken into account." This passage shows that Koch remains unabashed in face of legions of criticisms.

A man of the same type as Koch is Prof. Emil von Behring, of Marburg. Their careers, as German delegates to international congresses on tuberculosis, have a close similarity, for Koch, the discoverer of the tubercle bacillus, met opposition when he declared there was no danger from the milk and meat of tuberculous animals; and von Behring, the discoverer of the anti-diphtheritic serum, met with doubt when, in 1905, he announced that he had discovered a cure for human tuberculosis. It may turn out that Koch and he are alike in this also, for Koch once announced that he had found a cure, which was dismally untrue.

The interesting point to veterinarians is that the "cure," if cure it turns out to be, was hit upon when von Behring was studying the immunization of cattle against tuberculosis and first prepared his "bovovaccine." The new curative principle which he discovered, as he says, plays the essential part in the immunizing action of bovovaccine. The essential point is that this principle evolved is based upon the impregnation of living cells of the organism with a substance which emanates from the virus of tuberculosis. This substance he terms TC. When TC has become an integral part of the cells of the organism of the animals and has become metamorphosed therein he calls it TX. This TC, or TX, in the tubercle bacillus has extraordinary properties—it is the agent for the production of a formative substance; it possesses fermentative, especially catalytic, qualities; it has a selective action with regard to other substances; and possesses assimilating powers. In the process of immunizing bovine animals against tuberculosis the TC of the bacillus is freed from other substances. The virtue of the TC is that it exercises a symbiotic action, more especially upon the cellular elements in the interior of the tissues which have their origin in the germ

centres of the lymphatic system. The presence of the TC is the cause of the hypersensibility to Koch's lymph (tuberculin), and of protective reaction against tuberculosis.

Von Behring's problem, of course, was how to free this remarkable substance, the TC, from the substances which hinder its therapeutic action? After innumerable experiments on large animals he discovered that the TC, persisting in the tubercle bacilli, can be elaborated *in vitro* in such a manner as to be capable of being applied as a remedy without danger in the treatment of tuberculosis in man.

In the course of his announcement von Behring purposely withheld a detailed account of the manufacture of this miraculous curative. He purposely omitted the statement of the laboratory method, whereby he was able to get the substance TC in hand, satisfying himself, but not the public unduly throbbing with interest, with the announcement made. Before doing this he proposed to place portions of the curative in the possession of prominent experimenters, particularly probably, clinicians, in order that data might be worked out on the virtues of the remedy. We may expect, therefore, that this will be a live question at the Washington Congress in 1908.

II. What opportunities the International Congress in Washington, 1908, offers.

The chance is indeed a rare one, since this great Congress on Tuberculosis meets in America this year, without interfering with the time set for the meeting of the American Veterinary Medical Association, for the veterinarian to attend both. An outline of the opportunities would be: the privilege of seeing the tuberculosis exhibition; of listening to the speeches and addresses by distinguished foreigners; of receiving the publications; of enjoying the social functions, the travel, the observations on the ways and means of combating tuberculosis.

At the close of the 1905 congress in Paris, despatches from Washington were read by Drs. Fling and Jacobs, the American physicians, in which an invitation was extended by our government to the congress for the meeting in 1908 to be held in our

capital. The list of directors of the American National Association for the Study and Prevention of Tuberculosis, of which the International Congress is to be the guest, indicates its scope. Theodore Roosevelt and Grover Cleveland are vice-presidents. Our own national comity is a sufficient guarantee that this republic will make the congress of 1908 as much to the world as was done by the Republic of France in 1905. Physicians, veterinarians, social workers, nurses and other persons having a special interest in tuberculosis are invited to become active or associate members of the congress and to participate in its pleasures.*

The congress will assemble for actual work September 28 to October 3, 1908, though the date of the congress is set for three weeks, September 21, to October 12. During all this time the Tuberculosis Exhibition will be open and a course of lectures by distinguished foreigners will be given. Also demonstrations and clinics of unusual interest to medical men will be conducted during the three weeks. The *British Medical Weekly*, two years ago, complimented us on this plan, which enables visitors from foreign parts to travel through the north of the United States during portions of the first week, attend the congress the second week, and rehabilitate themselves by travel to the southward during portions of the third week.

In the Tuberculosis Exhibition, as was true in Paris, where 1,500 exhibitors sent in objects, materials will be assembled from all corners of the earth. Members will be able to collect and carry away valuable material. Of the separate exhibits, literature often forms a part, and copies of this may be had free. Many states and countries will send in numerous copies of books or papers giving details of the local warfare against tuberculosis. Copies of these may be had for the asking. The education of every medical man cannot fail to be enhanced by visits to the exhibition.

The foreign papers poked lots of fun at the sight of learned professors carrying away the heavy publications of the last con-

* Veterinarians should apply for membership to Dr. John S. Fulton, Secretary-General, 810 Colorado Building, Washington, D. C.

gress in Paris, while the smaller ones were stowed away in their bulging professorial pockets. As hitherto, the papers announced in the printed programme for the Washington Congress, will be printed in advance to be distributed on the day of presentation, together with the summaries. This time, however, they will appear in *Spanish*, as well as English, French and German, out of courtesy to the Latin countries to the south of us, many of which will send delegates to the congress. The Proceedings, including the special lectures, discussions, and an account of the exhibition, will cover 2,000 pages, and will be ready for distribution by the close of 1908. Active members, who pay a fee of five dollars, attend the congress, vote, and get copies of the Proceedings. Associate members, paying two dollars, attend the congress and its social functions, but neither vote nor receive copies of the Proceedings. Several prizes of a thousand dollars each are offered as awards for special work against tuberculosis. In a city like the capital, Washington, where the chivalry of the nation should find opportunity in the social functions for the pleasure of distinguished foreigners attending the congress, we may well vie with French gentility displayed in the congress of 1905.

The chief opportunities for veterinarians attending such a congress, apart from specialized knowledge obtained, the books distributed, the exhibition seen, are: the widening of the intellectual horizon of the individual, the view one gets of the disease as a national horror and of its international bearings as a menace to all peoples under every sky; the chance of seeing and hearing the most distinguished savants, medical and veterinary, of noting how tuberculosis endangers the food supply of man and beast in a multiform manner, of knowing why such pronouncements as those of Koch in 1901, and von Behring in 1905, astonish and transfix the world. The man who attends such a congress, and is caught up by its inspiration, cannot help but rise on stepping stones of his dead self to higher things.

THE FIGHT AGAINST BOVINE TUBERCULOSIS WITH BOVOVACCINE AND THE RESULTS.

BY DR. W. JUNGCLAUS, DANZIG, VETERINARIAN AT THE BACTERIOLOGICAL INSTITUTE OF THE BOARD OF AGRICULTURE FOR WEST PRUSSIA.

Translated by Dr. Wilford Lellmann, Professor at N. Y. University.

When we review the results of the last few years, we must concede that considerable progress has been made in the battle against tuberculosis or "perlsucht" of cattle.

The methods of Ostertag and Bang, employed for years in East Prussia, Pommerania, Holstein, Brandenburg and other provinces, have prevented the dissemination of tuberculosis; indeed, the percentage of tuberculous animals in these herds has materially decreased year after year. These methods, however, have so far not been able to really exterminate tuberculosis, but merely have diminished the number of infected animals, and brought the farmer to a realization of the extent of tubercular infection in some herds. Both these methods have once been aptly designated as mere "outpost skirmishes" in the war against tuberculosis.

About three and a half or four years ago vaccination against "perlsucht" was inaugurated by von Behring, of Marburg, the renowned German investigator and discoverer of tetanus and diphtheria antitoxin. He produced a vaccine called Bovovaccine, consisting of human tubercle bacilli, attenuated to such a degree as to be incapable of producing tuberculosis. The vaccine is absolutely harmless for cattle, and only perfectly healthy calves, two to twelve weeks of age, are to be vaccinated. During this period of life calves may be bovovaccinated for the first time, and after three months the second inoculation is to be performed; a few weeks later the vaccinated animals become immune against tuberculosis.

Extract from "Deutsche Landwirtschaftliche Tierzucht," Leipzig.

In stables with infectious pleuro-pneumonia, it is advisable to first treat the calves to be vaccinated with pneumonia serum, and to place them in well ventilated stables; the calves are to be boovaccinated only after they have made a complete recovery, which takes place, as a rule, before the calves are three months of age.

This vaccination has proved eminently successful, not only experimentally, but in practice as well. It is of special interest that a number of practical experiences, covering a period of over three and one-half years, were made in Germany, and the highly satisfactory results prove conclusively that we have now at our disposal a remedy which, when used early in life and in healthy animals, will prevent infection with "perlsucht."

The largest number of vaccinations—about 4,000—were performed on the estates of Counts Schwerin-Goehren and Wolfs-hagen, by District Veterinarian Dr. Ebeling, of Woldegk, in Mecklenburg. The younger generations of the herds on these estates are now practically free from tuberculosis, at least only a very insignificant percentage are now reacting to the tuberculin test, while three and one-half or four years ago 80-100 per cent. responded to tuberculin.

Furthermore, all necropsies performed so far have demonstrated that the vaccinated animals are free from tuberculosis. Insignificant tubercular foci were found in a few instances, but the very condition of these foci proved that they were the result of an infection which occurred prior to the boovaccination. It was also demonstrated by the condition of some of these tubercular foci (caseation and calcification) that boovaccine exerts some curative influence on small tubercular lesions. Boovaccine, therefore, is not only a preventive against tubercular infection, but, to a certain degree at least, also a curative agent.

For over three and a half years inoculations with boovaccine have also been performed systematically, on the estates of Prince Ludwig of Bavaria, in Sarvar, Hungary, by Dr. Strelinger, and according to most carefully compiled records, his results have

also been most gratifying. Furthermore, bovovaccination has been practised extensively on the estates of Archduke Frederick of Austria, in Teschen, and of the Prince of Fuerstenberg.

Foreign countries, too, have adopted the use of bovovaccine, and noteworthy results have been recorded in Belgium, Holland, France, Russia, America and Japan. Of special interest, however, is the fact that the Archduchy of Hesse has officially adopted bovovaccination, and it is practiced there systematically under the irection of Prof. Dr. Lorenz, the well-known discoverer of the vaccine of swine plague. In Hesse, therefore, every calf is being bovovaccinated under state control, and the authorities must be firmly convinced of the efficacy and harmlessness of bovovaccine, otherwise they would hardly have taken these steps.

I could enumerate a long list of estates in Silesia, Saxony and East Prussia, where bovovaccination has been in vogue for a number of years, and according to oral and written reports the results have been very satisfactory everywhere.

The Bacteriological Institute of the Board of Agriculture for Schleswig-Holstein states in its last annual report, that none of the calves vaccinated in 1906, have suffered from any untoward after-effects, and are in a very satisfactory state of health at present.

For some time bovovaccinations are being conducted under the auspices of the Bacteriological Institute of the Board of Agriculture for West Prussia. Several hundred animals have been vaccinated, no fatalities have occurred, and the proprietors are well satisfied with the present state of health of the animals.

Judging from the number of applications received thus far, bovovaccination in West Prussia will assume such vast proportions during the ensuing year, that the force of the Bacteriological Institute is liable to prove entirely inadequate. The institute, therefore, advises the proprietors to have the bovovaccinations performed by private veterinarians.

THE smallest bird's egg is that of the tiny Mexican humming bird. It is about the size of the head of a pin.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

SOME INTERESTING CASES.

BY SIMON J. J. HARGER, V. M. D., VETERINARY DEPARTMENT, U. OF P.,
PHILADELPHIA, PA.

Rupture of the Tendo-Achilles in the Dog.

Complete rupture and overstretching or partial rupture of the cord of the hock or tendo-achilles (perforato-gastrocnemius tendon) is frequent in the dog.

Case 1. Black-and-tan terrier. History of falling down a flight of stairs three weeks before.

Symptoms—Lameness in the left hind leg, inability to support weight, excessive flexion of the hock under the body, lowering of the point of the hock and the hip on that side, relaxation of thigh and leg muscles; the enlarged ends of the tendon, separated for a space of an inch, could be felt under the skin; skin intact.

The treatment consisted in making a parallel incision over the tendon, approximating the separated ends with two catgut sutures and sturing the skin wound. A temporary fracture dressing was applied for five days and then replaced by a permanent one. Dressing removed at end of four weeks; lameness gradually disappeared and recovery complete.

Case 2. King Charles spaniel; fell down some steps in the yard. Tendon excessively overstretched and thin.

Symptoms and treatment the same as in case 1, excepting the suturing of the tendons. Recovery complete.

Case 3. Italian greyhound. No history. The symptoms were aggravated; tendon excessively stretched and point of the hock almost touching the ground when bearing weight. With the hock in its normal position, the tendon was relaxed and wrinkled. For this reason considered the advisability of resection and suturing of the perforato-gastrocnemius tendon and

cord of the tebial fascia, but concluded to follow nature's plan and applied fracture dressing. In five weeks the leg was much improved, but far from normal. When seen again six weeks afterward, the recovery, without any treatment, had become complete.

This form of rupture of the cord of the hock is peculiar to the dog, due to the form and function of the leg and relative weakness of the tendinous structures.

Melanosis of the Parotid Gland—Extirpation.

Patient gr. g. 9 years, driven to a baker's wagon. Had a small tumor on parotid gland when purchased two and one-half years before. The parotid gland was hard, lobulated on its surface and enlarged to twice its normal size. By its compression of the jugular vein and its branches it produced passive congestion of the brain with symptoms described by the owner as vertigo. The color of the horse and the physical characters of the enlargement justified a diagnosis of melanin deposits. Whether it was simple melanosis, melano-sarcoma or any other variety of pigmented tumor was not determined with the microscope. Most of these tumors, as seen in the horse, are simple melanosis without any tumor neoformation.

A crucial incision was made over the tumor, the vertical being the longer, and the four flaps laid back. The tumor was carefully dissected from the surrounding structures, the branches of the jugular, including its main branch passing through the gland, and the arterial branches of the external carotid were ligatured as met. The operation was so sanguinary as to threaten life. Virtually the entire gland was extirpated and all stray masses of pigment were removed. The cavity cicatrized, leaving little blemish or deformity. Seen seven years after the operation the horse was still doing very satisfactory work and his nutrition was not affected by the loss of the gland, but there is now evidence of recurrence in loco.

Thoracentesis in Acute Pleurisy.

Patient, sorrel gelding, in the practice of Dr. E. W. Powell, of Bryn Mawr, Pa. Showed symptoms of pneumonia. Classical signs on auscultation and percussion, temperature fluctuating from 103 to 105 degrees Fahrenheit, pulse 50 to 70, appetite capricious. Treated for ten days according to routine methods, including revulsive application on the chest, without improvement.

Aug. 27—Horizontal line of dullness between lower and middle thirds of chest on the same level on both sides, absence of vesicular murmur, respiration costal, 40 per minute and labored, temperature 104 degrees. Prescribed cardiac stimulants and diuretics, including digitalis and passium acetate.

Aug. 31—Line of dullness higher on both sides; respirations more rapid and labored. Performed thoracentesis. A small trocar and canula, after proper preparation of the skin, was inserted at the most dependent part of the first intercostal space behind the olecranon muscles on the right side. The fluid was allowed to run until the stream was interrupted by the respiratory movements of the lungs—practically the entire fluid contents. The respirations at once became less labored and the pulse more full and strong. Medicinal treatment continued. The fluid, slightly turbid and flocculent, measured between 3 and 4 gallons.

Sept. 5—The pleural cavities has refilled and the clinical symptoms returned. A like quantity of fluid was withdrawn through the next intercostal space behind. Medicinal treatment continued. After this the exudate did not reform and the horse made a rapid and complete recovery.

This case suggests the advisability of an early aspiration of the chest before the lungs are atelectatic and the exudate has still further irritated the pleura and invited septic infection. All of the fluid can be removed with impunity at one time, at least in recent cases. Under proper asepsis puncture of the pleura is harmless and may be employed unhesitatingly for diagnostic purposes in all species.

Dumminess—Adeno-carcinoma of the Cerebral Choroid Plexus.

B. g., purchased one week ago; taken out under the saddle, refused to move and brought back to the stable with difficulty.

Clinical—Cerebral stupor, sluggish movements with some loss of nerve co-ordination, poor conditions, emaciation, appetite good; showed crossed-leg test, fore and hind. Would not walk and could be taken out of stall or moved from place to place only by backing, which was accomplished with ease. A morbid growth of the cerebral ventricles was diagnosed.

Pathologic—Left cerebral ventricle was filled and distended with an ounce of citrine-colored fluid. The place of the choroid plexus was occupied by a dark-brown, flat, cauliflower-like mass, $\frac{3}{4}$ inch thick and $1\frac{1}{2}$ inches in diameter. The interior areola were filled with a gelatinous substance. The cerebral cortex was thin and atrophied from the intraventricular pressure.

Dr. D. J. MacCarthy reports: The original site of the plexus showed nothing of the normal arrangements, but a picture revealing the papillomatous growth, or more correctly, an adenomatous arrangement of a racemose gland. The structural work is composed of connective tissue growing from the surrounding blood vessels. The connective tissue is present only in very small amount between the acini. The cells of the acini are the cubical cell with small round, deeply staining nuclei, following the type of the open dymal cell. Here and there the acini are filled with a hyaline material. It reacts the same as the gelatinous exudate met with in other pathological conditions of the ependymal lining of the ventricles. Adeno-carcinoma of the choroid plexus was heretofore unknown in man and the lower animals.

SYMPTOMS OF RABIES IN THE LIVING DOG.

(Continued from page 521.)

By JOHN A. McLAUGHLIN, D. V. S., PROVIDENCE, R. I.

Madison, Wis., October 22, 1907.

Mr. JOHN A. McLAUGHLIN,

159 E. Benefit St., Providence, R. I.:

DEAR SIR—Your letter of October 5th has been forwarded to me here and I take pleasure in answering the questions which you put to me to the best of my ability.

First—Have you ever seen a case of rabies in the living dog?

I have seen at least one hundred cases and had them under observation from early in the disease until death took place, making after death a post-mortem examination, with microscopical study and inoculation into animals.

Second—What ante-mortem proof have you in the living dog of rabies?

To answer this would require a description of symptoms which you can find in any good work on veterinary medicine. The proof is exactly the same in this disease as in most others in the living animal, viz., a collection of symptoms which, once carefully studied, can scarcely be mistaken.

Third—Are the negri bodies alone proof of rabies?

In the present state of scientific opinion, they are. Personally, after considerable experience, I do not doubt their diagnostic value.

Fourth—Are the negri bodies ever found where rabies does not exist?

No.

Fifth.—Are dumb and furious rabies one and the same disease?

They are.

Sixth—Are negri bodies always found in cases of dumb rabies?

As far as my experience goes, yes. In cases of reported failure, it must always be remembered that a sufficient number of sections would doubtless show negri bodies. It is impossible, of course, to examine the whole of a brain in serial sections. Therefore, in the routine examination for diagnostic purposes, certain failures may result, but these do not prove the absence of these bodies from the brain.

Seventh—Has any one in the past, or is there anyone living capable of positively diagnosing rabies in the living dog?

This question has been answered largely under No. 2. Certain parasites have in a few reported instances caused symptoms resembling those of rabies. I believe, however, that by an educated man a mistake in the diagnosis of rabies is an exceedingly rare thing. If we should take cognizance of the mistakes made by even the most noted physicians, in the diagnosis of typhoid fever, for example, we would have just as good ground for doubting the existence of this disease as we have for doubting the existence of rabies, and the possibility of a correct diagnosis in the living animal.

Eighth—Who diagnosed rabies in the living dog for Pasteur?

I cannot answer this question positively. He was associated in much of his work with Professor Nocard and other veterinarians of note connected with the famous school of Alfort. Without being able to make a positive statement on this point, I feel sure that Nocard did some of this work for him. At any rate, he was associated with men entirely competent to do this for him.

I would be glad if you would let me know the object of your investigation, because requests are frequently made for such information for motives which are not entirely creditable. In

using what I have said I must request that no part of it be extracted. Either use all of what I have given or none at all. I am,

Very sincerely yours,

MAJYCK P. RAVENEL, M. D.

I wish to refer REVIEW readers back to case VI. This was a *positive* case. Yet the dog who caused the negri bodies in his brain is still very much alive and well, and the boy is just as free from any ill effects from being bitten as though he had taken the Pasteur treatment, possibly better. One of the things which I think will be proven, if other veterinarians will collect data on this most important subject, is that negri bodies are found in dogs which have not been bitten. One case, of course, proves nothing, as this dog may possibly have been bitten twice, and nobody be aware of it, but if one hundred veterinarians would investigate thoroughly the question would be settled.

There is another point of interest which can be cleared up in the same way, and which can be cleared up in no other way, which relates to the seriousness of these bites in the human. My experience, so far, leads me to believe that *the bite of a rabid dog is just as harmless as the bite of a non-rabid one.*

Providence, R. I., Jan. 9, 1908.

DEAR DOCTOR—In answer to your questions by mail, I wish to say I was bitten Tuesday, October 15, 1907, on bottom of index finger on left hand. Took treatment (Pasteur, at R. I. Hospital) Tuesday, October 29. Received two injections, one left, one in right abdomen. Made me very sick and weak; so sore and tender that I could hardly breathe, so I refused to continue treatment. Dog that bit mine is very well and still running around. It comes down our street every day to play with Squire's barn dog.

Yours truly,

NORMAN L. BROWN,
8 Cloraine St.

Case X.—Dec. 18th. In spite of the fact that I had seen so many cases of "rabies," I never suspected the disease in this case, so I give the symptoms I saw from memory, as I took no notes.

Dec. 15th. Three days ago, made my first visit to dog in East Providence.

Breed, poodle.

Sex, male.

Age, between two and three years.

Symptoms: Nothing special that I could detect. My attention was called to his bark; it was peculiar. Diagnosed gastritis or gastro-enteritis, due to eating something he had got outside of house. A case of "scavengitis" (my name for the very common swill barrel engorgement of dogs) or else due to swallowing some foreign material, such as pieces of carpets, buttons, rubber nipples, stones, shells, etc., etc. Prescribed olive oil and a digestive powder.

16th—Dog worse.

17th—Worse. He was restless while I was present, would curl up on parlor armchair and bark, the same as I have seen hundreds do who are suffering from bowel trouble or worms. Mouth was slightly open, tongue a darker red, but he drank water and swallowed it without difficulty.

18th—Died 5:10 a. m.

18th—P. M. (post-mortem): Contents of pleural cavity not examined; stomach internally inflamed, contained two small pieces of cloth, one black, about $\frac{3}{4}$ of an inch in length by $\frac{1}{2}$ inch in width, and one of a lighter color, a little smaller in size; otherwise the stomach was empty, except for a brownish mucus smeared over that organ, some of which in proximity of black piece of cloth was black, from the black dye from the black piece of dry goods. Small intestines, inflamed internally pretty well through entire extent, the inflammation being in streaks. There were several small marks, one about one-quarter of an inch in length by a thirteenth in width (measuring by the eye) which I thought must have been done by a sharp body; all the others were much smaller. Very little fæces, and what there was was a blackish brown. I thought it was due to blood, but it may have been due to the black die.

Large intestine, inflamed internally. A few inches posterior to ilio-cæcal valve it was dilated for a space of between four and five inches; this dilation was very apparent to the eye, and the walls much thinner, and could be produced only by an im-

paction. It contained a small amount of blackish brown fæces. The remainder of bowel was practically empty.

Lungs—Not examined.

Liver—Darker than normal.

Kidneys—Healthy.

Larynx—Contained some froth.

Trachea—Also contained froth, as far as examined, which was but a few rings.

History.

As I received it while treating patient.

Dec. 15th—First visit. Animal very restless; did not sleep for three nights; vomiting; bowels constipated. I made a digital examination of rectum and found a small amount of soft fæces. Was informed the animal would snap. I thought they meant he was naturally snappy, but he jumped on my lap, gave my mouth a lick and permitted me to scratch his head and neck, and made no attempt to snap.

16th—Had vomited the beef tea I ordered every time it was given. Milk and lime water was substituted, which was retained. The olive oil was also retained. Passed a small amount of soft fæces. Afterwards an enema of two quarts of warm water was administered, but brought nothing away, though later he passed a small amount of *hard fæces*. When I attempted to scratch his head he snapped at my hand but did not draw blood. Prescribed *bromidia*.

17th—Ordered morphine.

18th—After post-mortem was informed that the dog was not naturally snappy by daughter, but had become so since he got sick and would attack the dogs he formerly played with and had bitten one.

Negris bodies were found by bacteriologist in Brown University to-day, December 18th.

Case XI.—Dec. 19th.—Called on owner of dog, Mrs. R., and received the following history. I give it as near as I can from notes taken then and there, in her own words:

Dec. 12th—(As near as she could remember.) Her dog first showed symptoms of trouble; the symptoms were nervousness. Would have nothing to do with the other dogs that he habitually mixed with. He would *spit* at them if they attempted to disturb him. Dog was a spitfire anyway and did not hesitate to attack any dog, large or small, but did not act this way to his usual companions until December 12th.

Dec. 13th—Refused to eat. Gave tablespoonful of castor oil, which he vomited.

Dec. 14th—Nervousness increased, acted wild, crazy, and seemed bound to attack one of his former companions, and was continually desirous to get out of house, and when out to get in. Spit at other companions on less provocation. Tackled one of them. Daughter separated them and the "rabid" one scratched the daughter's hand with teeth.

Mrs. R. lays great stress on the "nervousness" and says when the dog would fall asleep his head would move spasmodically, then his front legs, then his hind legs. She used the word "convulsions" to describe this excessive "nervousness." I put the following questions:

Was he ever bitten? Not that she knows of.

Does he run loose? No; he never was allowed on street without one of the family, and as a rule was on a leash.

How often did you wash him? Twice a week in summer time, and never less than once a week. He was continually in my lap and I was always examining him for fleas. I do not see how he could have been bitten and I not see it. But, of course, anything is possible. He never, in all his sickness, attempted to bite any of the family. He lapped water and swallowed water to the very end.

I wish to add here that I not only never suspected rabies but never suspected that the family did, in this case, but I asked, as a special favor, permission to hold a post-mortem, as I always do in these cases of gastritis, or gastro-enteritis. Having succeeded in getting family's permission so far I thought it a "brilliant" idea—if I could get it—to carry head to bacteriologist. The laugh, so far, seems to be on me.

Mrs. R. asked me if a stomach trouble could produce the change in his bark, and she laid great stress on her question. I answered that any sickness might produce a change in the note of a dog's bark.

I wish to add that I heard him bark on the 15th—my first visit—and his bark was very peculiar; but when I heard him bark on the 17th it was not peculiar, but simply indicated pain. It is my experience that when a dog with a bowel trouble (when it is not due to worms) begins to bark or whine or yelp it usually means death.

RECENT DATA IN VETERINARY SCIENCE.

(Continued from February REVIEW.)

BY DRs. LOUIS A. AND EDWARD MERILLAT, CHICAGO, ILL.

A few words about three formidable fevers, although almost exclusively human diseases, should not be amiss, in view of their significance to all mankind. These are *typhoid fever*, *yellow fever* and *malaria*.

Typhoid fever, caused by the swarming in the blood of the *Bacillus typhosus* which gains admission by way of the digestive tract through the ingestion of food contaminated with colonies of the microbe, according to Eccles (*Med. Rec.*, August, 1906), more frequently incriminates the *milk supply*, *foods previously infested with flies*, *dust* and *other dirt* than the drinking water, which is too frequently blamed without looking farther for a contributing cause. In the drinking water the dose generally ingested is said to be too small to evade the resisting forces of the body of ordinary individuals, but in milk and other foods which furnish media for the growth of the microbe enormous doses may be ingested at a single meal. Fleas, bedbugs, clothing, letters, etc., are believed to be capable of conveying the infection. And finally, there are now the so-called "typhoid bacilli carriers"—individuals who without suffering from the disease themselves continually infect others cohabiting with them. The gall-bladder is frequently infested with typhoid bacilli which sojourn therein for weeks and even years after recovery from an attack of the disease.

The toxæmia of typhoid is due to an endotoxin liberated in the blood from the microbes that have perished and as the poison is not accumulative the disease aborts as soon as the microbes are banished from the blood.

Yellow fever is transmitted by the bite of the *Stegomyia calopus*, but the virus inoculated into the susceptible subject by it has not been discovered. Thayer (*Med. Rec.*, January, 1907), has found certain ameboid forms which have been called *Amæba febris flavæ*, but the results of his researches have not been accepted as final. He himself concludes that additional evidence would be necessary to positively incriminate these unidentified

forms. They should be found in more cases than he has investigated and they should be identified in some guise upon the mosquito itself, before the role they play is definitely settled. However important would be the discovery of the virus of yellow fever, mankind is to be congratulated upon the already well-proven fact that the disease occurs *only* through the intermediary of this special mosquito and only after it has previously infected itself by biting an infected human being. These presents, together with the fact that the *Stegomyia calopus* is only a nocturnal creature, place the prophylaxis upon a definite basis.

Malaria is caused by hematozoa—the *anopheles*—inoculated into the blood by mosquito bites, but the mosquito theory is no longer accepted as the exclusive mode of transmission. While not a single experienced investigator denies the important part played by mosquito bites in malaria the revelations of the past two years show clearly that the disease may sometimes be transmitted by other carriers of the hematozoon—flies, dust-laden food, drinking water, etc. Kelsch (*Bul. de l'Academie de Med.*) reports that among the German troops stationed in malarial districts the epidemics often occur in March before mosquitoes make their appearance and furthermore, the disease gradually dies out toward September when these insects are most plentiful, indicating at once that the insect infection is not alone responsible.

Malaria has never been prominently mentioned in veterinary literature, at least not in America. That it does exist in animals, however, has been amply proven on divers occasions by different continental veterinarians. In certain swampy districts and during certain years the existence of bovine malaria has been frequently reported in Italy, in France and in Germany. (I am unable to lay hands on the articles at the present moment, and only retain a memory of having read them.) Lingard reported the existence of malaria amongst horses in India several years ago and Gugliemi (*Rev. Gen. de Med. Vet.*, January 15, 1908), proves the receptivity of the horse by bacteriological examination of the blood of a horse that died from the disease. This subject belonged to a fisherman and was kept out of doors at night in a low, swampy district, which would lead to the suspicion that it contracted the infection in the same way as human beings—by mosquito bites. As we now know that hematozoa play a significant role in several animal diseases, these reports may serve as a useful hint, in the investigations of those

mysterious endemics that sometimes beggar explanation from the clinical symptoms and from a search for the probable cause. Too often our investigations end with a suspicion—but never a proof—that the feeds are the causative elements of outbreaks of unusual, mysterious diseases.

The Relations of the Teeth to the General Health.—One who reads the medical literature extensively and who stops to compare it in this connection with that of past epochs will be struck with the wholesome interest the medical profession now takes in the study of the teeth. While their treatment is left exclusively to the dentist, the physician now examines the teeth with no less interest on that account, but scrutinizes them in search of causes of ill-health with much greater diligence than a few years ago. The armies and navies of the world have just come to recognize dentistry as indispensable to the welfare of their soldiers and sailors, and the whole medical profession in its research into cause and effect has recently begun to give conspicuous attention in its periodicals to the relations of the teeth to the general well being of mankind. In short, it is now conceded that the economic importance of the teeth to the human race is not a trivial one. Dentistry is prophylactic, corrective, curative, analgesic, beautifying; it is helpful often where random medication has failed; and if its importance is great in human beings it is little less so in domestic animals, although in the latter, partially on account of irrational application, it still lacks scientific consecration.

Men often spend years preparing for college, years at the college, years in the medical and post graduate school and then years as internes in the large hospitals only to prove incapable of effectually coping with the headache, the belly ache or the trivial discomfort of their first patient when they enter practice. In the search for victims for their capital operations they are incapable of appreciating the real importance of trivial causes. While one is deciding upon an appendicectomy the older practitioner administers a dose of castor oil, collects a dollar and the patient goes about his business (*Lancet*). Analogous comparisons may be made in veterinary subjects.

Two observations which recently came to the writer's notice are worth recording. The first, a middle-aged man, who had suffered remittent attacks of facial neuralgia of obscure origin for no less than seven years. Everything failed to relieve him until a dentist, at the cost of fifty cents, extracted a decayed

wisdom tooth and the disease disappeared like magic and never recurred. The second is that of an eight-year-old horse that was mysteriously sick for more than a week with a mysterious indisposition. The patient hung the head, ate little and carried about two degrees (Fahr.) of fever. There were no other symptoms. In spite of the long duration of the ill health no organic disease developed. Finally, by placing the patient in the hospital under constant surveillance a slight abberation of mastication was detected, suggesting at once a severe toothache as a possible cause of the whole trouble, although previous careful palpations of the mouth were negative. Placed upon the table, with the aid of a mouth speculum and electric reflector the molar denture was submitted to a searching examination. Each infundibulum was picked carefully with a fine tenaculum. A very small opening was found in the left fifth superior molar. The suspected tooth was extracted and sure enough upon dissection it was found to be in the siege of an acute pulpitis. There was no marked improvement at first, but two days later, while removing the wadding from the alveolar cavity, an abscess burst from the sinus into the tooth cavity and discharged a pint of foetid, watery pus. Immediately the appetite returned, the fever dropped, and the patient was well.

If unmolested, what is the course of such a disease? The abscess soon points into the sinuses and nasal fossæ and either produces a chronic or intermittent catarrh. Submitted to a veterinarian for treatment, the molars would be pronounced apparently sound and the patient would be trephined, the catarrh treated by irrigations, and finally after two weeks the openings would be allowed to close. For a time the patient is better, there is no nasal discharge, but later, possibly a year, the same foetid discharge returns. A second examination of the mouth by palpation and ordinary inspection still fails to disclose the still integral, but no less offending tooth, and the horse is submitted to a second trephining and irrigation. Again the results are good for the discharge is cured. At some future day, probably after having the scrutiny of more than one veterinarian, behold, a split tooth is discovered. Anyone could diagnose it then; probably the owner did so himself.

The point we wish to raise by relating this case is that the veterinarians involved in such cases in their efforts to theorize logically upon the origin of the catarrh often fail to recognize a plain case of toothache. Oh, yes, dental origin was

suspected sure enough, but there had not been enough common sense displayed to disclose it. If our devotion to animal dentistry results in nothing more than the early diagnosis of toothache in horses, the American veterinarian's penchant for dentistry will not have been in vain, but there are so many other little situations incriminating the teeth, encountered in the routine of a practice that make dentistry as relatively important to the brute creation as it is to the human family.

Vasotomy for "Social Parasites."—Amongst the numerous suggestions, criticisms, and comments I have received since "Recent Data in Veterinary Science" began in the REVIEW, comes a clipping, from our esteemed confrère White, of Tennessee, taken from the *Journal of the American Medical Association*, agitating the somewhat new proposition of unsexing undesirable individuals which was started by the passage of a law in the State of Indiana authorizing the sterilization of confirmed criminals, idiots, imbeciles, etc., by vasotomy.

In Indiana, since the passage of the act authorizing the operation, vasotomy has been performed upon hundreds of inmates of public institutions. It seems that there is little objection to the operation on part of the patient as it is simple of performance, free from harmful complications or sequelae, and does not destroy the sexual desires or sexual powers. It is the simple division of the vasa deferentia and has no other effect than that of blocking the passage of spermatozoa from the testicle to the seminal vesicles. It produces *sterility* without *impotence*, and aims of course at the elimination of degenerate progeny and is undoubtedly the most feasible as well as the most effectual remedy yet proposed in that direction. Its wisdom is, however, questioned from many sources. The operation, known to be trivial, if given wide publicity, may become the successor of illegitimate abortions. Dreston (*Journal Am. Med. Assn.*, January 18, 1908), predicts its possible dangers in the following words: "When the husband and the illicit lover are told that they can play fast and loose with their vasa deferentia, cutting off the testicular secretion by an operation less serious than the extraction of a tooth, it would be hard to conceive of a recommendation fraught with more far-reaching evil and disaster." With the fear of tell-tale progeny removed there is also danger of increasing adultery and other forms of consenting vice, and rapine and the spread of contagious diseases would remain unchecked. The dissenting prefer castration, while the adherents of va-

sotomy deny the probability of its abuse by the medical profession.

Vasotomy is of no use in domestic animal surgery as there can be no demand in animals for an operation that sterilizes without also dispatching the impelling sexual impulse. Our purposes are served only by castration and vasotomy concerns us only as citizens.

Blood Serum as a New Element in the Study of Immunity.—Since Virchow first expounded his cellular pathology and since Metchnikoff first advanced his theory of phagocytosis, no attention had been given during a decade to the fluids of the body as factors in immunity and autogenic resistance. The study of pathology, especially of septic diseases, was concentrated upon cellular activity; the sera were ignored. To-day, on the contrary, the sera are assuming the most important role, as indicated by the widely accepted opinion that the discovery of the opsonic properties of blood serum is the most important advancement made in the study of sepsis and pathology in general for many years. Among the recent significant medical discoveries opsonins occupy the first rank.

The Horse versus the Auto for the Physician.—Bonninghausen, discussing the relative merits of the horse and the automobile for physicians, in the *Deutsche Medizinische Wochenschrift*, Berlin (December 26), roads and weather considered, decides in favor of the former as the most reliable conveyance. The latter is a nerve-racking, noisy, jarring affair that keeps the occupant under an incessant mental strain not known to the driver of the horse-drawn vehicle. He also says: "It is not so much a question as to how quickly the doctor can get to his patient but that he gets there sometimes, and the horse can be depended upon to get him there sooner or later." Comparing the expense of the two conveyances he finds the horse to be much the most economical.

These conclusions compare favorably with our own observations and experiences. In cities the horse for a time was discarded by almost every physician on account of the greater speed of the auto and in anticipation of greater personal comfort than was thought possible to obtain in a horse-drawn vehicle. From the opinions of several hundred physicians from all over the United States, published in the *Journal of the American Medical Association* during the past year, it is readily seen that the primal object of discarding the horse for the auto was

to save time in transit. "The time spent in going from patient to patient is so much time actually lost," said the auto enthusiast, but eventually it was found that the time actually saved by the greater speed of the auto was not sufficiently noticeable to a family physician whose practice is limited to a radius of a few miles. The little time gained between visits is not adequate compensation for the mental strain of driving an auto, for the occasional (?) annoying delays en route, and for the additional expense, and hence the physician is looking to the horse again, the driving of which, if not a pleasure, is as relaxing to the nerves as the auto is straining and, which can *always* be depended upon to complete the journey without delays, and finally which can be maintained at nominal cost. The prominent physician or surgeon whose services are daily sought in different parts of a large city remote from each other finds the auto indispensable and this class, especially because they can afford to employ experienced chauffeurs, will retain them, while the rank and file of the medical profession is destined to return to the horse.

In country districts, speaking from the experience of several veterinarians who have tried the experiment, the horse will be retained as the physician's conveyance, pending the improvement of the roads which now place autos entirely out of commission for several months of each year. Good roads are absolutely indispensable to the successful employment of the automobile for any business. Bad roads, be it from hills, mud or roughness of surface, will wreck an auto to the junk shop long before the average physician or veterinarian has earned enough to pay for it, and even upon good roads I doubt whether any physician or veterinarian whose income is limited to two thousand to three thousand dollars per annum, is financially able to own and maintain an auto, as a conveyance to and from their patients.

The advisability of purchasing an auto by veterinarians has been considered by many who have found that long drives are the bane of their existences. To my readers who are in this mood and who have such anticipations for the coming spring I would suggest that your decision be based upon the use to which the machine is to be put. If intended to entirely replace the horse, my answer is on the negative side emphatically, but if intended as a pleasure, for your family as well as for yourself, for the purposes of occasionally taking the grief out of a long journey, possibly after an already hard day's work, over a good

road and on a pleasant day in company with merry and congenial companions, and if your financial resources justify, I see no reason why you should not be the owner of a good automobile. An auto of standard make and of consistent price, if used judiciously and for selected occasions, can be maintained at a reasonable cost and should last for years, but if made to endure the hardships of all kinds of weather and roads its life is indeed short and its maintenance costly; too costly for a veterinarian. A veterinary practice may enable one to own an automobile, but the horse-drawn vehicle must previously have earned enough money to purchase it and must be retained to meet the current expense of the luxury. In short, the auto must not be thought of as the universal conveyance for the veterinary practitioner, *aujourd' hui*. The writer qualifies for this testimony by two years of personal experience.

Fatalities from Diphtheria Antitoxin.—Several fatalities supervening the use of antitoxin for the treatment of diphtheria recently reported in medical journals has brought out a manifest anxiety as to the possible frequency of the accident. It seems that since a few fatalities, unmistakably due to antitoxin, have been reported, quite a number of practitioners have been reminded of certain instances of sudden deaths from diphtheria which could not at the time be accounted for. Now that the serum is known to be sometimes dangerous to life and the element responsible for its dangerousness is yet unknown the serum treatment for diphtheria, effectual as it has proven to be, is given a decided set-back. Fortunately, these accidents are rare, but exactly how rare no one is yet competent to report, because the suspicion is a new one. The *Journal of the American Medical Association* editorially devotes two columns to the subject in a recent issue (February 8, 1908), in which, after admitting the importance of the new problem, it is predicted that it is the hypersusceptibility of the patient's serum and not the antitoxin that is at fault. The horse serum, in which the antitoxic element is contained, is suspected as being responsible for the mischief. The suspicion is based upon the fact that pure horse serum injected into controls (laboratory animals). sometimes produces the same symptoms as those which precede death from antitoxin in the human patient.

DR. W. M. CUMMINS succeeds Dr. R. N. Mead as inspector-in-charge, Bureau of Animal Industry, Fort Atkinson, Wis.

ABSTRACTS FROM EXCHANGES.

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

A PECULIAR LAMENESS IN A HORSE [*Mr. Huynen*].—A horse turned out to pasture gets caught in artificial briars and has several wounds on the right hind leg. After the recovery of some of these, that were superficial, the animal remained lame; and only after three months medical advice is looked for. While at rest the animal rests his foot on the toe; from time to time the leg is flexed and raised suddenly as if a sharp pain had occurred. In walking the leg scarcely rests on the ground and the foot touches it with the anterior part of the wall of the foot. The leg is atrophied, specially in the anterior and posterior part, and the sensibility is all gone in those parts. Whatever is the cause of the lameness, the horse is considered as incurable and is killed. At the post mortem were found a fracture of the fibula on a level with the fibulo-tibial arch. The anterior tibial artery was completely obliterated. The muscles of the posterior tibial region had undergone dry necrosis and those of the anterior region were rather sclerosed. The nervous conductivity was interrupted by the presence on the great sciatic nerve by a growth as big as the thumb, pressing on it. All these lesions were attributed to a violent bruise on the superior part of the posterior and external faces of the leg.—(*Annales de Bruxelles.*)

INTENTIONAL PERFORATIONS OF THE RECTUM IN BOVINES [*Jos. Hamoir*].—Sadism is not always the only stimulating cause of these accidents, they are often the result of a revenging intention. For instance: A cow is taken sick suddenly, with serious symptoms and peritonitis being suspected, slaughter is advised and carried out at once. Besides the evident lesions of peritonitis, the causes that gave rise to it are made visible. On the floor of the rectum there is a laceration, measuring three and one-half centimeters, situated about forty centimeters from the anus. Back of it the rectal mucus is ecchymosed and excoriated. An inquiry revealed the fact that a young man, who had charge of the stock, angry against the cow, which, when annoyed with the flies

would become irritated and, by running about, disturbed the whole flock; the fellow, to punish her, had violently introduced the handle of a fork into the rectum of the animal and injured her.

In another instance, which terminated before the courts. Not less than thirteen animals had died with the same symptoms: colics, tympanitis, expulsive efforts, little or no alteration in the pulse or temperature. Post mortem had failed to give any explanation as to the cause of such calamity. Finally the author was called to a dying animal. Post mortem is made immediately and beside the lesions of peritonitis, there was a lesion on the rectum. Two deep wounds perforated the organ. Suspicion was then awakened, and when another cow was taken ill, it soon became a conviction. Another death was followed by the same result at autopsy; peritonitis due again to a large wound of the rectal membranes. Inquiry proved that these wounds were inflicted by a man, who acknowledged that he had done it to revenge himself.—(*Annales de Bruxelles.*)

EPIPHYSIAL TIBIO-FIBULAR FRACTURE WITH RUPTURE OF THE TENDONS OF THE ANTERIOR TIBIAL AND COMMON EXTENSOR MUSCLES IN A DOG [*Prof. Cossens*].—A young pointer dog fell over a child and the result was a fracture of the epiphysis of the tibia and fibula, marked by undoubted symptoms. An injury which is quite common among dogs. A bandage of Delwart was applied and in three weeks the fracture was firmly united. Yet the animal had a peculiar lameness, the articular angle of the tarsus was gone and the metatarsus remained straight in the direction of the tibia, the tendinous cord of the hock was relaxed as is observed in horses suffering with rupture of the flexor of the metatarsus. A careful examination of the hock revealed a rupture of the tendons of the two muscles; the anterior tibial and the common extensor of the phalanges. A bandage of Delwart was applied on the whole leg, from the stifle down, in such a way that the hock joint be kept in a normal flexion and allow the two ends of the ruptured tendons to unite. This bandage was left on for four weeks and when it was removed union had taken place and a perfect action of the leg the result.—(*Annales of Bruxelles.*)

A CASE OF BRIGHT'S DISEASE IN THE HORSE [*Mr. Poulin*].—Light draught horse of seven years with the following history: Since two years he has had, with intermittences, swelling of the hind legs. Slight at first, this has increased lately. Sometimes

the appetite has been poor. Urination is very clear but more abundant than usual. He often micturates, while walking, when at work. Now he stretches often as to urinate, the back is arched. The swelling runs up to the hock, he has light colics. Conjunctivitis, pale and oedematous. Nothing wrong is detected by auscultation either in the circulation or respiration. Analysis and examination of the urine revealed the presence of noticeable quantity of albumin and some granular cylinders. There was no sugar, no mucus, no biliary substances. The diagnosis was evident. After a few days there were evidences of comatous uremic poisoning. Digitalis, salicylate of soda, bicarbonate and milk diet improved him temporarily and sufficiently to allow the owner to dispose of him and the author lost sight of him.—(*Annales of Bruxelles.*)

PERINEAL HERNIA IN DOGS [*Prof. Hebrant*].—After passing a review of the peculiar conditions that this affection can present, the author describes the method of operation that he believes the most appropriate to all cases. He proceeds as follows: The animal is kept on low diet for twenty-four hours, anaesthetized, and the abdomen, perineum, and flank aseptized. The hernial sac is open and thus the diagnosis confirmed, as to the organ which is displaced and contained in the hernia. Whatever these are, they are reduced, and a piece of the sac is excised as large as possible. The edges are then closed by two layers of sutures, one deep with catgut, securing the edges of the peritoneal sac and the other with silk, closing the edges of the skin. Iodoformed collodion is laid over the wound. That is the first part of the operation. The second consists in opening the abdomen on the linea alba, if it is a slut, on the side of the sheath, if it is a male, in the cases where it is the bladder or the uterus that is to be fixed on the walls of the abdomen. If rectopexia is to be resorted to, it is through the left flank that laparotomy is performed. The organ that has been in ectopia being found, a wide portion of its outer surface is scraped with a scalpel, so is a corresponding portion of the peritoneal walls and the two are sutured together with interrupted stitches, passed through the muscular coat of the organ. Five stitches are generally necessary. The wound of the skin is closed also with stitches and the entire wound protected with an iodoformed dressing. Six or seven days are all that is required for complete union of the skin. This method of treatment has already given many good results to the author.—(*Annales of Bruxelles.*)

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

TWO ILLUSTRATED CASES OF DISEASE OF THE PYRAMIDAL PROCESS [*W. Willis, M. R. C. V. S.*].—First Case. Aged gray mare reported as having pulled lame while at work the previous afternoon. The foot carefully examined revealed nothing wrong except great tenderness of the foot when hammered to remove and replace the shoe. There is no lameness running straight forward, but when pulled up or turned she was distinctly lame on the near hind leg. There was no distension of bursa in the whole leg, only a small bog-spavin which was blistered. After one month the mare returned to work. Within a week she had another attack of severe lameness which passed off after a few hours. This condition showed itself several times. She kept on getting lame and getting over it. In the interval she had developed thickening round the coronet, at the toe. Neurotomy of the posterior tibial gave her relief and allowed her working until worn out; she was then destroyed. The illustration of her case shows bony mass on the extremity of the tendon of the extensor pedis and calcareous change in the superior broad ligament of the navicular bone.

In case No. 2, it is a bay mare lame on the near hind leg. She had been found lame in bringing her out of the stable and nothing could be detected on examination except a marked soreness when hammered slightly on the foot. Pressure over the insertion of the extensor pedis tendon was painful. After one month she had a well developed swelling on the coronet. Lameness passed off and returned. Three years after she was destroyed. The illustration shows more extensive lesions although of the same nature as the other.—(*Veterinary Record.*)

SOFT CATARACT IN A TERRIER—OPERATION [*W. H. Flook, F. R. C. V. S.*].—Six months' pup was, when three months old, having one eye grayish white; he soon had cataract and the other eye became affected one month later. The operation was by discission. The animal was chloroformed, the eye washed with Chinosol and with a fine cataract needle the cornea was punctured and an incision in the form of a cross, made in the capsule of the lens. The cataract was soft and a white milky substance escaped in the aqueous humor. Twenty-seven days after the

terrier was fairly well, avoiding obstacles. The right eye showed a T-shaped scar of the lens. The left eye had a large rosette-shaped cataract in the center of the lens. Another operation was performed on that eye thirty-one days after the first. After each operation atropine was used. The dog was sold later on and with his sight restored and both eyes completely cleared.—(*Veterinary Record*.)

BOTRYOMYCOSIS OF THE TAIL [*Henry Taylor, F. R. C. V. S.*].—Brown gelding, aged 15, presented three years ago a little lump at the end of the tail. Six months after it was as big as an orange and now it is as large as a cocoanut. It was removed by docking and the hemorrhage that followed was rather difficult to arrest. The tumor was examined by Sir John M'Faydean, who reported it a case of botryomycosis.—(*Veterinary Record*.)

GASTRIC DISTENSION IN A DOG [*H. W. Billingham, M. R. C. V. S.*].—Bloodhound was feeding at 4 p. m.; was noticed to whimper and leave the trough. Has a fight with another dog and is removed in another kennel by himself. About 7 p. m. was heard whimpering, his abdomen is distended and he is trying to vomit; his temperature is 99 degrees. Later the abdomen continues to increase in size and at 9 p. m. it is enormously so; the dog is lying on its side, collapsed, icy cold, temperature 98.2 degrees and pulse about 130. The poor, suffering animal is removed to the front of a fire and placed in a hot bath; massage is applied to the abdomen, eserine and strychnine are given. Temperature gradually rose to 102.2 degrees, but the distension of the abdomen increased, and after howling a few times, the dog died. At the post mortem the stomach was found immensely distended, extending below the umbilical region and almost black in color. It was rotated from left to right on the œsophagus, almost a complete turn, so as to completely close the œsophagus. The duodenum was drawn almost round the œsophagus so tightly as to prevent the escape of gas in that direction. On partially returning the stomach in its natural position, the gas began to rush into the intestines.—(*Veterinary Record*.)

A CASE OF STRABISMUS [*E. Clive Webb, Lieut. A. V. C.*].—Four-year-old black country-bred mule, supposed to be blind. He is very nervous of any sound, immediately turning its head in the direction it supposed the sound is coming from. He carries his head in a peculiar way, viz., with its muzzle slightly depressed towards the breast, or in other words, as if it con-

templated butting. Closer inspection reveals that neither of the pupils are in normal position; about the center of the palpebral fissure; but that the inner half of each is hidden from view beneath the lower lid, just below the angle of the inner canthus. The eyeballs were therefore turned downwards and inwards. The case was one of convergent squint, affecting both eyes. On testing the sight by striking the mule and threatening to strike again, it was found that he could only see and then very imperfectly, when the striking object was in front of him, but not if it was on either side. Both eyes were less prominent, there was no sign of weakness and examination with the ophthalmoscope, although difficult to make, revealed nothing abnormal.—(*Journ. of Compar. Pathol. and Therap.*)

REMARKABLE RECOVERY AFTER REDUCTION OF SCROTAL HERNIA, FOLLOWING OPERATION ON A SUSPECTED CRYPTORCHID [*E. Clive Webb, Lieut. A. V. C.*].—Very unusual case in which a horse operated for an unsuccessful searching after a testicle, and during which much dilatation of the inguinal ring had been made, rendering the possibility of hernia likely to follow. It did indeed, and during the necessary manipulations to reduce it and casting the animal to return the mass, the intestine, not less than an armful of the small intestines protruded. After reduction, after cleaning the organ with antiseptic solution, much of which entered the abdominal cavity, finding it impossible to close with sutures the upper inguinal ring, the canal was very tightly and firmly packed with dry wool, filling up every crack and crevice, including the scrotal sac, and then suturing the latter over the plug with strong gut sutures. For two or three days there was some little febrile reaction, but this soon subsided and notwithstanding two or three attacks of colics, the animal finally made a comparative rapid recovery.—(*Journ. of Compar. Pathol. and Therap.*)

INTERMITTENT LAMENESS IN A HORSE CAUSED BY A THORN [*H. C. Stewart, A. V. C.*].—The history of a hunter, which exhibited lameness at various times during two months and finally was brought to the writer with a transverse suppurating wound on the inside coronet of the off foreleg at the junction of the skin and hoof. The wound was about an inch long and was granulating. Antiseptic fomentations and dry bran poultices were prescribed and on the following day at the time of examining the foot there was found, embedded in the wound, a sharp

strong briar. This was extracted and the wound dressed in a usual manner. In three days the animal went sound and remained such afterwards.—(*Veterinary Record*.)

FRACTURE OF THE ISCHIUM [*J. B. Hare, M. R. C. V. S.*].—Bay gelding, six years old, is very lame on the near hind leg. No history is given. He is supposed to have had a fall. Lameness does not suggest pelvic fracture. Animal is placed in a box and hot fomentations applied. After a fortnight about, he can trot fairly sound, but on turning him sharp on either side or in backing he immediately knuckles over at the fetlock. Shown to two other veterinarians, a diagnosis is made of injury to the anterior tibial nerve. A sharp blister is applied on its course. After one month, the animal is greatly improved and the knuckling over has disappeared. However, the owner gets tired and orders him destroyed. The post mortem revealed an imperfectly united fracture of the ischium with a very large callus pressing on the trunk of the great sciatic nerve.—(*Veterinary Record*.)

FRENCH REVIEW.

BY PROF. A. LIAUTARD, M. D., V. M.

FOREIGN BODY IN THE RUMEN OF A COW—GASTROTOMY—RECOVERY [*Mr. Leon Soul*].—This animal is six months pregnant and she is suffering with œsophageal obstruction. Abundant salivation, marked tympanitis, difficult respiration, and the detection of the foreign substance by manual examination of the œsophageal groove. Attempts to push with the fingers the foreign body back upwards in the mouth, failed. It is then that the probang is resorted to and with it without difficulty the stranger is pushed into the stomach. But when the instrument is pulled away, only part of it is drawn, half of it remains in the œsophagus. Only one thing is to be done and after two days of thinking the owner gives his consent to have the operation of gastrotomy performed. This was carried out with all necessary precautions of antisepsy; the rumen being opened on the left flank with the animal in the standing position. The rumen having its incised edges secured to the edges of the cutaneous incision, the author introduced his arm, thoroughly disinfected, into the rumen and feeling for the broken end of the

probang, found it stretched between the walls of the rumen. He carefully pulled it out. Ten Lembert stitches were applied on the rumen and the skin closed after the sewing of the muscular incision, with silk sutures. After the third day the animal began to ruminate, appetite came back, and the recovery was complete in a month. At the end of her time of pregnancy, the cow delivered a fine calf.—(*Recueil de Medec. Veterin.*)

EPIPHYSAR FRACTURE OF THE EXTERNAL ANGLE OF THE ILIUM [*Mr. P. Berton*].—A thoroughbred mare of three years, gets cast in her stall, the rope of her halter being passed round her coronet. She was very excitable and nervous and unsuccessfully struggled a great deal to free herself. It is not possible to help her on account of her struggles and finally exhausted she drops down; the rope of the halter is cut and the mare free, rises, resting the foot on the ground and showing only a little stiffness, with a little erosion of the skin round the coronet. The next day she exhibits much soreness, the left hind leg carries but little weight of the body and the toe scarcely touches the ground. The fetlock, coronet and lower part of the canon are hot, swollen and painful. The region of the hip is also very sore and the seat of a diffuse edema. There is asymmetry of the hips, the left is down. The animal is too nervous for further examination and she is left quiet. Four or five days after the edema has almost entirely disappeared. The hip of the left side is much lower, it has dropped some six or seven centimeters below its normal position and with the fingers the outside shape of the external angle of the ilium can readily be made out. The deformity is well marked; the distance between the internal and the external angles on the right side measures 30 centimeters and only 20 on the left. The movements of the animal are somewhat reduced. Gradually the lameness passes away and is all gone after some time. The deformity of course remained.—(*Revue Generale de Medec. Veter.*)

ENORMOUS POLYPUS OF THE LEFT SINUSES OF A HORSE—REMOVAL—RETURN OF THE GROWTH [*Mr. A. Strullet*].—The long history of a case occurring in a 12-year-old horse, which was operated by wide opening of the sinuses of the left side with great loss of facial bones, and was found involving all the cavities of that side. Although the operation was very severe, that much tissue had been involved and had to be removed, that a complication had necessitated the operation of tracheotomy, the animal made a kind of recovery in which the large wound had

healed and closed. The animal was about considered as cured when, some three months after, he presented symptoms which indicated the return of the old trouble. He was destroyed. The examination of the head showed that all the sinuses, as far as the most remotest cavities, were filled with the neoplasm. The inferior maxillary sinus, the superior, the frontal and also the ethmoidal volutes. The growth was adherent to the bony walls of the sinuses but not to the septum nasi. The tumor was hard, but easily incised; it weighed altogether 1,015 grammes—over two pounds. Examined with the microscope, it exhibited the structure of a fibro-sarcoma.—(*Societe Veteri. de Lyon.*)

FOREIGN BODY IN THE ŒSOPHAGUS OF A DOG—ŒSOPHAGOTOMY—RECOVERY [*M. M. P. Leblanc and L. Auger*].—This animal presents all the symptoms of œsophageal obstruction, and in the jugular groove and of the right side, the foreign body is readily detected by taxis. From information given, the condition exists since two days. The animal is put to sleep, the skin of the right side is shaved and aseptized and the operation is performed exposing the organ, already very much altered, ecchymozed and infiltrated, but not perforated. It is carefully opened and the foreign body extracted. It is a large piece of cervical vertebrae of a bovine; rough, and with sharp points on its surface. The wound was closed, the animal put on liquid diet and recovery complete in twenty-five days.—(*Journal de Zootech.*)

ŒSOPHAGEAL JABOT IN A HORSE—RENAL CALCULUS [*Mr. E. Forgeot*].—This was a kind of post mortem surprise, as it was found in examining the cadaver of an animal, which was to be used for the practice of dissection by students. In opening the thorax, there was found a dilatation of the stomach, extending from the posterior aorta to the diaphragm and situated between the two layers of the mediastinum which was perfectly normal. This dilatation measured 18 centimeters in length, 21 in circumference and had two curvatures convex. There was considerable thickness of the muscular coat, but no laceration, as is usually found in other jabots. The mucous membrane had longitudinal and transversal folds and was also much thickened. It was almost adherent to the muscular coat, contrary to what exists in normal condition. There was no laceration, no contraction or sclerosis and no hernia of the mucous. Besides this very interesting lesion a large calculus weighing 35 grammes was found in the pelvis of the right kidney.—(*Journal de Zootech.*)

CIVIL SERVICE EXAMINATIONS.

VETERINARIAN.

The United States Civil Service Commission announces an examination on March 11, 1908, at the places mentioned in the list printed by the Commission, to secure eligibles from which to make certification to fill a vacancy in the position of veterinarian, \$100 per month, Quartermaster's Department at Large, Philippine Islands, and vacancies requiring similar qualifications as they may occur in the Philippine Islands.

The examination will consist of the subjects mentioned below, weighted as indicated:

<i>Subjects.</i>	<i>Weights.</i>
1. Letter-writing	10
2. Veterinary anatomy and physiology.....	20
3. Veterinary pathology.....	20
4. Veterinary practice.....	40
5. Training and experience.....	10

Total	100
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Applicants must indicate in their applications that they are graduates of reputable veterinary colleges.

Age limit, 20 years or over on the date of examination.

This examination is open to all citizens of the United States who comply with the requirements.

This announcement contains all information which is communicated to applicants regarding the scope of the examination, the vacancy or vacancies to be filled, and the qualifications required.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at any place mentioned in the list printed by the Commission, for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will therefore arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

ARMY VETERINARY DEPARTMENT.

OPERATIVE TREATMENT OF EPIZOOTIC LYMPHANGITIS.

In the AMERICAN VETERINARY REVIEW of August, 1905, Dr. W. P. Hill, 12th Cavalry, corrected a statement made by me in reviewing Captain Pallin's treatise on epizootic lymphangitis, which was to the effect that horses affected with this disease in the Philippines do not ordinarily show the extensive lesions on the shoulder described by Pallin as occurring in British India. Dr. Hill upheld Pallin and presented an interesting photograph of a diseased Philippino pony, proving his contention.

I made a note of Dr. Hill's correction for future study in these islands. Since my second term of service here I have on record eighteen (18) cases of the disease affecting horses of this regiment and mules of the Quartermaster's Department. Of these eleven affected the hind legs; two the flanks and abdomen; one the submaxillary region extending up to the cheeks and eyelids; one the lips, nose and nasal mucous membrane, and three the shoulder and neck. I was pleased by Dr. Hill's correction, as by such we detect our personal errors, but the above statistics hardly decide the point in his favor as regards this military station.

Since the disease has now appeared in the state of Pennsylvania, as reported in these columns, it may be of more general interest than formerly to describe at least the operation, treatment and its result of one such case, on account of its experimental proceeding.

The affected horse was received at the regimental veterinary hospital on February 6, 1906, with a beginning affection on the right shoulder. After isolating and watching the animal for study, the shoulder presented, on March 4, 1906, cord-like enlargements of the lymphatic vessels about 16 inches long and somewhat radiating, with six open lymphangitic buds. Operation could no longer be delayed, and Veterinarian Kelty, Quartermaster Department, and myself agreed to operate "half and half" by the two principal methods used here; he by dissecting

out about one-half of the diseased lymphatics, and myself by simply splitting the other half and applying actual cautery. His part was neatly done, but took some time and left a rather long and deep open wound which had to be stitched; while my part



SCARS ON SHOULDER FROM OPERATION FOR EPIZOOTIC LYMPHANGITIS.

was roughly done with an ordinary heavy line-fire iron, leaving the wound open but protected by the artificial covering made of burned tissue.

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Both methods were successful, but the cauterized section healed about ten days earlier than the dissected portion. There had always been a good deal of discussion among veterinarians here about the various methods of operation, each having his preferences according to personal successes attained. We in the army must find a simple, quick and effective method, because in the field we cannot carry with us fine operating cases, operating tables, Paquelin's cautery or other modern paraphernalia. The operation treatment by *two methods on one horse* proved that the ordinary firing iron is still a simple and effective instrument, and the results attained by its use preferable to those by dissection with a knife.

The horse was discharged for duty on April 26, 1906, has done duty ever since, has never had a reaction, and only large scars remain, which plainly indicate the original field of affection. The accompanying photograph of the shoulder of the horse as it appears to-day will help to understand the brief description of the morbid condition "before and after treatment."

There can be no doubt that the cryptococcus of Rivolta is a genuine tropical vegetable parasite and that it will always be with us here, certainly as long as we are ignorant of where it comes from. There can also be little doubt that while prophylactic measures taken here have perceptibly decreased the number of cases, yet they assume more and more the severer types so well illustrated by Pallin. The ordinary microscopic study of the parasite is easy and fascinating, and a microscopic diagnosis can be made without staining after one has become thoroughly familiar with the germ. For garrison duty, however, staining is much preferable. We here use Tiedeman's stain, which brings out the big, glistening and round bodies with a fine pictorial effect.

OLOF SCHWARZKOPF, D. V. M.

The above description of Epizootic Lymphangitis is correct, as I had the pleasure of seeing the horse on my arrival here.

WALTER R. PICK, Veterinarian, 1st Cav.

Camp Stotsenburg, Pam. P. I., January 8, 1908.

UNDER the regulations of the meat inspection service of the B. A. I. it is permissible to prepare chitterlings for food purposes provided the product is thoroughly cleaned and is sold as chitterlings; but it is not permissible to convert chitterlings into other edible products to be disposed of under another name.

CORRESPONDENCE.

UN SOUNDNESSES IN HORSES.

A List of Show-ring Disqualifications to be made by the United States Department of Agriculture.

Chicago, Ill., Feb. 10, 1908.

The Editors of the American Veterinary Review:

GENTLEMEN: The following circular letter, which has been sent out to many, should command the attention of every veterinarian in the country:

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY.
WASHINGTON, D. C., January 11, 1908.

DEAR SIR:

The Bureau wishes to obtain a consensus of opinion from leading veterinarians on the unsoundnesses in horses, which may be regarded as sufficient cause for the disqualification of animals in the showing of judges at fairs and horse shows. No list of this kind has been prepared for use at American shows, and it is thought that a statement by the Bureau, based on the widest possible authority, would be of great educational value to exhibitors and very helpful to judges at exhibitions where official veterinarians are not employed in the ring.

I shall appreciate it if you will send the Bureau, at your early convenience, a statement showing, in your opinion, what unsoundnesses should be placed on the list.

Very respectfully

(Signed) A. D. MELVIN,
Chief of Bureau.

In this country the standards of excellence, for the different breeds and types of horses, have never yet been settled. Such standards not having been made, there have never yet been pub-

lished lists of disqualifications barring horses from prizes in the show ring because of the deficiencies of abnormalities. Yet, among veterinarians, breeders and dealers, there has always been a feeling of unrest in this matter and a general belief that agreement could be reached on standards of excellence, and disqualifying deficiencies or abnormalities, for the different breeds and types of horses.

Such standards of excellence and lists of disqualifications which, though personal opinions in forming judgment will always enter, could be generally agreed upon, has long been sought after.

Previous to 1904 there was a "Committee on Excellence and Soundness" in the American Veterinary Medical Association; which, at St. Louis, when the association met there in the World's Fair year, made a report in which it appeared that the members could not reach agreement on standards of excellence and soundness, and, lamentable as it was, asked to be discharged. In fact, it was too much to ask of a committee, consisting of two worthy members, one a prominent private practitioner, the other an equally prominent professor of veterinary medicine to settle the question of excellence or soundness in such varied types as the draught horse, roadster or saddle horse, or in the various breeds, from the Belgian or shire to the Shetland.

Yet the following year, 1905, witnessed the passage of the first State law, ordering the licensing of stallions standing for public service, requiring them to be examined for soundness by a veterinarian before license would be granted, and commanding State registration of such animals. Wisconsin was the pioneer in this work, and at the instance of Dr. A. S. Alexander, Professor of Veterinary Science in the University of Wisconsin, in 1907 the State legislature passed a law giving the right to revoke stallion licenses for cause and stipulating the hereditary, transmissible or communicable diseases which should be deemed sufficient to warrant rejection of stallions, having them, for breeding purposes. Dr. Alexander was the man who inaugurated the movement, and his efforts bore fruit in the passage of the two wise laws. As a result of the initiatory work of Wisconsin, Pennsylvania, Minnesota and Utah have lately passed similar statutes, while like measures are pending in other States.

The formation of such statutes under veterinary advice and their administration under veterinary direction, crowds upon us more and more the necessity of determining standards of excel-

lence and soundness in the different breeds and types of horses; and the deficiencies or abnormalities which should exclude a stallion from service as a breeder, or a horse of any given breed, type or class, from awards in the show ring. The ground will have to be gone over very thoroughly. The benefits to the horse industry to be derived from such agreement must be obvious to every student of zootechnics. What Dr. A. S. Alexander has done in Wisconsin for the improvement of breeds and perpetuation of good qualities in the horse industry of his State, by the exercise of the rigor of the law and the education of horsemen through his pictorial works, published by the State, "The Principles and Practice of Horse Breeding" and the "Horse Breeding Industry of Wisconsin," might be done on a larger scale throughout the United States, if standards could be agreed upon and if we would abide by the tenets established.

The Bureau of Animal Industry of the Department of Agriculture proposes to make a statement, based on the widest possible authority, on unsoundnesses of horses which may be regarded as sufficient cause for disqualification of animals from awards at horse shows and fairs. As usual, this Bureau is aware of present needs. The unsettled opinions on unsoundnesses in horses; the need that standards of excellence be established, in order that high-class breeding be encouraged and that the production of poor stock be discouraged; the initiatory legislation, looking towards standardization; the proven benefits of such standards to the horse industry, all point to the desirability of the work proposed by the Bureau of Animal Industry. If that Bureau should issue a special report on the subject, richly illustrated, to show all the different unsoundnesses that it is possible to present pictorially, by the aid of the engraver's and lithographer's art, standard types of horses for different purposes, the patterns of the various breeds, including extensive textual information on deficiencies and abnormalities likely to occur in solipeds which may appear at horse shows and fairs, together with points of excellence and soundness and suggestions on standard score cards, the popularity of such a volume would be hardly less than the "Special Report on Diseases of the Horse," which has run through several editions. We need such a volume. We need it badly. Professors of veterinary medicine, of animal industry, private practitioners, veterinary and agricultural students, judges in show rings and at state, county or town fairs, breeders and dealers in horses will come to look upon it

as a guide. The stock of knowledge now possessed by leading veterinarians on unsoundness in horses would, in such a volume, become the possession of the whole profession and would be in a high degree edifying to us all. The men who have this special knowledge are under moral obligation to contribute to this cause of industrial and professional betterment. As the French put this thought, succinctly, *noblesse oblige*.

D. ARTHUR HUGHES, Ph.D., D. V. M.

DECLARING HIMSELF.—“Michael, here’s your frazzled oats.”

“Me good woman, I’ve had nawthin’ but frazzled oats fer a month handrunnin’. Can’t ye think of nawthin’ but oats?”

“You’re a brute!”

“That may be, Bridget, but I’m no harse.”—(*Louisville Courier-Journal*.)

THE Massachusetts Board of Registration in Veterinary Medicine reports that a warrant has been issued for the arrest of George G. Webster, for the illegal practice of veterinary medicine in that commonwealth, and that Webster, learning of the same, has left Massachusetts, and now is undoubtedly practising in other states.

B. A. I. APPOINTMENTS AND CHANGES.—During the month of January appointments of veterinary inspectors, and changes among veterinary inspectors, were made as follows: 18 new appointees, all assigned to duty at Chicago; 4 promotions, 30 transfers within the bureau service, 2 resignations (both temporary appointments), and 9 whose services were terminated, all of whom were temporary appointees with the exception of one whose appointment was revoked.

THE RIGHT CAR.—A traction company in a Tennessee town is still using the cars bought for their line when it was constructed—some fifteen years ago. Naturally the shaky old cars cause much disgust to those who have to ride in them.

A merchant of the town was particularly vexed recently when the motorman ran his car half a block past him before stopping. As he ran to catch it he yelled out:

“Can’t you even stop your blooming old freight train on the corner?”

“This is no freight train,” replied the conductor. “It’s a cattle car. Aboard!”—(*Judge*.)

SOCIETY MEETINGS.

SOCIETY OF COMPARATIVE MEDICINE, NEW YORK STATE VETERINARY COLLEGE, CORNELL UNIVERSITY.

OBITUARY RESOLUTIONS.

ROSCOE R. BELL, D. V. S.

Whereas, We, the members of the N. Y. S. Veterinary College, have recognized in the late Dr. Roscoe R. Bell a sincere and beneficent friend to all veterinary students, and

Whereas, It has pleased Almighty God to call him away at the zenith of his professional career, and

Whereas, The N. Y. S. Veterinary College recognizes in his death the loss of one of the most zealous and able men of the profession, be it

Resolved, That the sincere sympathy of the Society be tendered to the bereaved family, and

Resolved, That these resolutions be spread upon the records of this Society and a copy be transmitted to the AMERICAN VETERINARY REVIEW.

Committee. { A. B. EDMONDS, '08,
J. MCCARTNEY, '09,
L. L. PARKER, '10,

Ithaca, N. Y., February 19, 1908.

THE ALPHA PSI FRATERNITY, KANSAS CITY VET- ERINARY COLLEGE.

On the evening of February 1, 1908, the Delta chapter of the Alpha Psi fraternity was installed in the Kansas City Veterinary College.

The installation was held at the Midland Hotel, and was under the direction of Dr. George W. Gillie, the national treasurer, from Ft. Wayne, Ind. Following the installation services

there was a banquet which was highly enjoyed by all. The toasts were admirably rendered and were strongly savored with that spirit which tends to elevate the veterinary profession.

The Chapter consists of 19 active members, ten being chosen from the senior and nine from the junior class. Honorary members were chosen from the faculty.

ROBERT E. WAIVEAR, *President, K. C. V. C.*

RHODE ISLAND VETERINARY MEDICAL ASSOCIATION.

The fifth annual meeting of this association was held at the hospital of Drs. Dunn and Sullivan, on Jackson street, Providence, R. I., Tuesday, January 28, 1908.

The meeting was called to order by Pres. McLaughlin, and the following members responded to their names: Drs. J. S. Pollard, L. T. Dunn, J. A. McLaughlin, C. T. Frey, U. G. Richards, G. L. Salisbury, J. T. Chorlton and T. E. Robinson. Visiting veterinarians, Dr. C. H. Playdon, Reading, Mass., and E. J. Sullivan, Providence.

After the reports of the various committees the election of officers for the year ensuing resulted as follows: Dr. C. T. Frey, River Point, president; Dr. F. de M. Bertram, Newport, first vice-president; Dr. L. T. Dunn, Providence, second vice-president; T. E. Robinson, Westerly, secretary; J. T. Cunningham, Providence, treasurer.

Dr. E. J. Sullivan, O. V. C., 1907, was elected to membership.

The next meeting will be held in June.

T. E. ROBINSON, *Secretary.*

THE VIRGINIA STATE VETERINARY MEDICAL ASSOCIATION.

The regular semi-annual meeting of the above society was held in the office of its president, Dr. Thos. Frazer, Richmond, Va., January 8, 1908, at 10 a. m.

After the reading and adoption of the minutes, many interesting papers were discussed on the treatment of certain diseases of the horse and dog.

A great part of the time was taken up in discussing the inadequacy of our state law regarding the practice of veterinary medicine and proposing amendments. The said amendments were presented as resolutions, and a committee appointed to present same to the Legislature, now in session in Richmond, Va.

The next feature of the programme was the election of officers, which resulted as follows:

President—Dr. S. C. Neff, Staunton, Va.

Vice-President—Dr. G. C. Faville, Norfolk, Va.

Secretary-Treasurer—Dr. W. G. Chrisman, Charlottesville, Va.

At the conclusion of the election the following gentlemen, Drs. S. C. Neff, H. S. Willis, H. Bannister and J. G. Ferneyhough were recommended to the Governor for state examiners.

Meeting adjourned to meet in Norfolk, July 17, 1908.

W. G. CHRISMAN, *Secretary*.

VETERINARY ASSOCIATION OF THE DISTRICT OF COLUMBIA.

The first meeting of this association for the year 1908 was held on January 22, at 514 Ninth street, N. W., Washington, D. C. Twenty-four members were present. The secretary presented his annual report in which he stated, among other things, that the membership was forty-four, a gain of about fifty per cent. over the membership for the year ending December 31, 1906; that the average attendance was about sixty per cent., and at some meetings the attendance was about eighty-seven per cent.; that the financial condition of the association was highly satisfactory; that through the efforts of the association the bill regulating the practice of veterinary medicine in the District of Columbia was enacted into law, and that the board of examiners authorized by that law is composed of members of the association; and that the recommendations of the association with reference to the compulsory tuberculin testing of dairy cattle furnishing milk in and for the District of Columbia were receiving serious consideration by the law-making powers.

The annual election of officers was then held and resulted in the selection of the following:

President—Dr. John Lockwood.

Vice-President—Dr. A. M. Farrington.

Secretary-Treasurer—Dr. F. M. Ashbaugh (re-elected).

Trustee—Dr. John Rome (re-elected).

The above, with Drs. J. P. Turner and W. P. Collins, trustees, constitute the official body of the association.

Dr. C. B. Robinson addressed the meeting on the affection among fire department horses called Sonus Neurosis, or "Gong Lameness."

F. M. ASHBAUGH, *Secretary*.

CHICAGO VETERINARY SOCIETY.

At the November meeting of the Chicago Veterinary Society officers were elected as follows: A. C. Worms, president; S. S. Baker, first vice-president; W. F. Scott, second vice-president; Ed. Merillat, third vice-president; D. S. Jaffray, Jr., treasurer; J. M. Parks, secretary. Board of Censors—Dr. Jas. Robertson, Dr. W. F. Scott, Dr. W. F. Kaiser.

The election was followed by an enjoyable banquet and social evening, no papers being presented. As the Illinois Veterinary Society met in Chicago the first week in December, it was decided to meet in January, 1908; but owing to the illness of our president, A. C. Worms, no meeting was called that month. The February meeting was held in the Sherman House parlors, February 11, 1908, at 8.30 p. m., President A. C. Worms in the chair. In opening the meeting the president said he felt very much encouraged to see so many members present, and the excellent talent for the evening's programme; extended a hearty welcome to the visitors, and he thought the prospects were bright for many more such well attended, interesting meetings for the balance of the winter.

Among the visitors were: H. O. Ramsey, Phoenix, Ariz.; C. A. Babcock, New Rockford, N. D.; J. P. Foster, Huron, S. D.; H. J. Hagerty, Dubuque, Ia.; P. J. Cass, 349 Michigan avenue, Chicago, Ill.

Roll call was dispensed with. Minutes read and approved.

Unfinished business. Appointment of committees:

Literary and Publication—A. H. Baker, L. A. Merillat, Jos. Hughes.

Legislation—Robert Walker, Ed. Merillat, E. L. Quitman.

Entertainment—J. M. Parks, D. S. Jaffray, Jr., Geo. P. Frost.

The following candidates were elected to membership: W. F. Kaiser, M. D. C., class of 1904, Chicago; J. F. Seiter, M. D. C., class of 1905, Chicago; P. Lester Grubbs, M. D. V., class of 1907, McKillip.

The first paper on the programme was by Prof. A. H. Baker. Subject, "Acute Bronchitis in the Horse." A scholarly and practical paper, which was listened to with great interest, and brought out an animated discussion and exchange of views by many present. Next followed a paper by Prof. L. A. Merillat on a variety of conditions. First, "Dislocation of the Patella in the Horse." This subject the doctor classified under three heads, viz.: Pseudo, Real and Congenital Luxation. Second, Numerous Foreign Objects Found in the Equine Bladder. As usual, the doctor's paper was full of practical, up-to-date material for thought and suggestions. A long, interesting discussion followed in which nearly all present took part. Dr. E. L. Quitman was next on the programme, subject, "Nux Vomica," but owing to the late hour it was decided to postpone this paper until the next meeting, March 10, 1908.

Under new business—It was moved by Dr. L. A. Merillat that the president appoint a committee of three to draw up resolutions of condolence on the death of Dr. Roscoe R. Bell, of Brooklyn; that a copy of same be sent to his nearest relatives and another kept on file. Carried.

Adjourned at 11.25 p. m.

J. M. PARKS, *Secretary*.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.

The February meeting of this association was held in the lecture room of the New York-American Veterinary College, 141 West Fifty-fourth street, on the evening of February 5, with the president, Dr. Grenside, in the chair. There were 29 members and visitors present. After the usual business was disposed of Dr. E. A. A. Grange, of New York City, was called on to present his paper on "The Flow and Reflow of Nervous Impulses in the Cause and Cure of Disease." The paper proved to be one of great interest and opened up a new field for investigation as to the influence of the nervous system

on certain forms of lameness. He cited some very interesting cases of lameness among fire horses apparently induced by the sound of the fire gong. The doctor also believed that the great benefit derived from the injection of air into the udder in cases of Parturient Apoplexy was due in a great measure to the nervous impression made upon the nerve endings and conveyed to the central nervous system, inducing a flow and reflow of nervous impulses.

This paper will soon be published in the AMERICAN VETERINARY REVIEW, when it may be fully digested.

Dr. J. E. Ryder, of New York City, gave a very interesting account of some experiments on horses with the use of Nuclein. He has experimented with cases of influenza and pneumonia, principally. The doctor has employed the drug intravenously, subcutaneously, and by the mouth, and had come to the conclusion that the intravenous injection was by far the best method to employ. He mentioned the peculiar action which would occasionally follow the injection of Nuclein, the so-called "knock-out" effect which was very startling. He stated that this phenomenon seemed to bear no relation to the size of the dose or to the condition of the animal at the time of injection, but that he had noted that those which exhibited this peculiar effect generally made a more rapid recovery than others.

Dr. Ryder stated that the ordinary dose, as administered by him, was 10 c. c. of Nuclein solution combined with 10 c. c. of normal salt solution, injected intravenously. Generally three doses were necessary and he considered it important that the first should be administered early in the attack to get the best results.

In summing up, Dr. Ryder stated that the contemplated further experimentation with the use of Nuclein, and that he was of the opinion that it was of great value in the treating of influenza and pneumonia, at least.

Dr. C. S. Chase, of Bayshore, Long Island, read a very interesting report of a case of "Vegetative Poisoning in a Cow." This paper was discussed by Drs. Grange, Grenside, Ackerman and others.

A vote of thanks was extended to Drs. Grange, Ryder and Chase for their contributions to the evening's program.

Meeting adjourned at 11 p. m.

W. REID BLAIR, *Secretary*.

NORTH DAKOTA VETERINARY ASSOCIATION.

The sixth annual meeting of this association convened in the recitation room of the Veterinary Department of the Agricultural College at Fargo, N. D., on January 14, 1908, at 10 a. m., with Pres. W. F. Crewe in the chair.

President's address.

Roll call revealed the following members present: Drs. E. J. Davidson, Grand Forks, N. D.; B. C. Taylor, Hillsboro, N. D.; D. Fisher, Grandin, N. D.; L. Van Es, Agricultural College, Fargo, N. D.; J. W. Dunham, Fargo, N. D.; C. H. Martin, Valley City, N. D.; J. W. Robinson, Coal Harbor, N. D.; W. F. Crewe, Devil's Lake, N. D.; J. B. Campbell, Larimore, N. D.; G. D. Fisher, Hope, N. D.; J. A. Winsloe, Cooperstown, N. D.; A. A. Walker, Casselton, N. D.; J. P. Chisholm, Lisbon, N. D.

Dr. R. A. Glynn, of the B. A. I., stationed at Fargo, N. D., was a visitor at the meeting.

Minutes of the last meeting were read and approved.

Report of committees.

Standardization of Mallein and Tuberculin Tests, Relating to Elevation of Temperatures, etc., by Dr. Van Es.

Creating a schedule of Uniform fees for same, by Dr. Campbell.

Legislation, by Drs. Robinson and Walker.

Resolution, by Drs. Van Es and Crewe.

Programme, by Drs. Campbell and Van Es.

The following applications were presented for membership: Drs. C. E. Simmons, Wimbledon, N. D.; R. C. Cliff, Park River, N. D.; W. R. Cross, Grafton, N. D.; W. T. Brophy, Harvey, N. D.; E. A. Laing, Jamestown, N. D.; W. H. Hopkins, Minot, N. D.; J. F. Hughes, Fargo, N. D.; V. N. Dakken, Leeds, N. D.

All were voted on and admitted under suspension of the rules.

Meeting adjourned until 2 p. m.

Meeting called to order at 2.30 p. m.

The election of officers being the next in order the following officers were elected for the ensuing year:

President—B. C. Taylor, Hillsboro, N. D.

Vice-President—D. Fisher, Grandin, N. D.

Secretary—C. H. Martin, Valley City, N. D.

Treasurer—A. A. Walker, Casselton, N. D.

Reading of papers and discussion.

"Swamp Fever," by D. Fisher; discussion by Davidson, Van Es, Simmons, Taylor and Cliff.

"Milk Inspection," by J. W. Dunham; discussed by all members present.

"Pus in the Guttural Pouches," by B. C. Taylor, also specimens of pus calculi removed; discussion by all members.

"Tetanus," by L. Van Es; discussion by all members present.

"Hernia," by J. W. Robinson, reporting methods of operations on the various kinds, etc., which brought up a lengthy discussion.

"Capped Elbow," by C. H. Martin; discussed by all members present.

"Contagious Diseases," by W. F. Crewe, State Veterinarian, giving an outline of the work done the past year, which was very instructive, and brought out a lengthy discussion by all members present.

Clinics were held at the stock judging pavilion at the A. C. barns at 10 a. m., January 15.

Ovariectomy in bitch, by Dr. Davidson.

Cautery for spavin, by Dr. G. Fisher.

Cautery for ringbone, by L. Van Es.

Clinics adjourned until 2 p. m.

Removal of nasal polyp, by Dr. L. Van Es.

Exhibition of periostitis of lower third of tibia.

Exhibition of diseased lymphatic glands.

Clinics were followed by session in veterinary laboratory with exhibitions of Swine and Bovine Tubercular specimens obtained from inspectors in charge of the B. A. I., at Bismarck, N. D.; Sioux City and South St. Paul, demonstrated by Dr. Van Es.

Meeting then convened at assembly room.

A vote was taken as to the next location of annual meeting and Fargo selected, subject to call of Committee on Programme.

It was moved by Walker, seconded by Robinson, that a committee be appointed to make arrangements for a banquet to be held in connection with the next meeting. Carried.

Moved by Van Es, seconded by Robinson, that the secretary be instructed to acknowledge and thank Grand Forks Commercial Club for invitation to hold next meeting in their city. Carried.

Motion made by Cliff, seconded by Cross, that a vote of thanks be extended to Dr. Van Es for assistance and courtesies extended to meeting and association. Carried, rising vote.

The following were the committees appointed by President Taylor:

Banquet—Dunham, Van Es and Hughes.
 Diseases—Crewe, Hopkins and Dakken.
 Finance—Dunham, Chisholm and Winsloe.
 Legislation—Tracy, Robinson and Walker.
 Resolutions—Van Es, Simmons and Brophy.
 Programme—Martin, Cliff and Cross.
 Membership—Davidson, G. Fisher and Simms.

Meeting then adjourned until next annual meeting, subject to call of secretary.

C. H. MARTIN, *Secretary*.

KANSAS VETERINARY MEDICAL ASSOCIATION.

The fourth annual meeting of this association was held at Manhattan, Kan., January 2-3, 1908.

President D. C. Pritchard being absent, First Vice-President G. G. Furnish called the meeting to order in Room 26 of the Chemistry building at 2.30 p. m.

1. An address of welcome by Pres. E. R. Nichols, of the Kansas State College.
2. Dr. T. W. Hodley responded to the above.
3. A paper, "Tuberculosis," was read by J. C. Kendall.

Although State Dairy Commissioner (but now professor of Dairying at K. S. C.), his points were in line with veterinary contentions. Discussion opened by Dr. O. O. Wolf and continued by Dr. Schoenleber, Dr. Crumbine, of State Board of Health; Dr. Knisely, Dr. Hodley, Prof. Wilson, Dr. Kinsley, Dr. McClelland, Dr. Maxwell, Dr. Rogers and Dr. Guilfoil.

Motion made by Dr. Hodley that the president appoint a committee to work with the State Board of Health in securing legislation combating tuberculosis and other contagious diseases.

4. Prof. W. E. King gave a talk and demonstration of diagnosing glanders by the agglutination method. Discussion opened by Dr. Pyle.

5. Dr. W. M. Hobbs gave an interesting talk upon "Blind Staggers." Discussed by Dr. Schoenleber and others.

THE KANSAS CITY
VETERINARY COLLEGE

Moved to reconsider the motion calling for a committee to confer with the State Board of Health.

Adjournment motion carried.

Meeting reconvened in Old Chapel at 7.30 p. m., being called to order by V. P. Furnish. General order of business followed.

Motion carried that a committee be appointed to redraft the constitution.

Following veterinarians admitted to membership: Dr. H. S. Fritz, Junction City; Dr. B. A. Robinson, Independence; Dr. L. W. Goss, Manhattan.

Election of officers resulted as follows: President, Dr. J. F. Jones, Arkansas City; first vice-president, Dr. H. S. Maxwell, Salina; second vice-president, Dr. C. B. McClelland, Lawrence; secretary-treasurer, Dr. Burton Rogers, Manhattan. Executive Board—Dr. W. T. King, Olathe; Dr. W. M. Hobbs, Holton; Dr. C. B. Kern, Beloit.

Motion carried to appoint committee on resolutions to draft resolutions expressing our appreciation of Hon. C. A. Stannard, and his services in securing passage of the veterinary practice act.

Programme continued.

1. Castration of Stallions—Standing Operation, Dr. Charles Saunders.

2. Municipal Meat and Milk Supplies, Burton Rogers.

A few specimens demonstrating same.

3. Kansas Parasites, by P. J. Kirschner, but read by O. O. Wolf.

Committees appointed: Resolutions—O. O. Wolf, W. B. Flanders, E. H. Killian. Constitution and By-Laws—C. B. McClelland, C. W. Hobbs, Chas. Saunders.

Motion carried that the chair appoint a committee of three or five on legislation, to be known as Committee on General Legislation, and given power to act as they see best for the best interests of the general public.

Adjournment, motion to meet at 9 a. m. in College Hospital, carried.

Meeting at College Hospital, where the following clinic was carried out:

Ovoporectomy in Mare, Dr. D. O. Knisely.

Ovoporectomy in Bitch, Dr. T. W. Hodley.

Meeting reconvened in Old Chapel at 12.30 p. m., being called to order by Vice-Pres. O. O. Wolf.

Report of committee on constitution heard, and motion carried to accept as a report of progress and continue.

Resolutions 4a, 4b, 4c and 4d passed.

Motion made to meet in Topeka at the usual time in 1909, declared out of order, being so in constitution.

Motion to amend constitution and meet in Manhattan lost because of legislature meeting in Topeka in 1909.

Motion carried for a recess to partake of a lunch provided by Dr. Schoenleber. Meeting reconvened.

Programme.

1. Intestinal Disorders, D. O. Knisely.

2. Paper, C. B. Kern.

3. Address, Dr. C. W. Burkett.

Remarks by Drs. De Wolf, Wolf, Schoenleber, McClelland and Rogers.

4. Hypodermic Medication, F. W. Caldwell.

Reports of cases by Dr. H. R. Groome, Dr. F. W. Caldwell.

5. Extemporaneous address, Senator W. A. Harris.

6. Address, Dr. Schoenleber.

The following were made members: Drs. Frank S. Beattie, Fred W. Caldwell, W. N. Matteer, J. P. Jones, C. E. Bassler, H. R. Groome, J. H. Cheney.

Thirty-nine members in attendance.

Resolutions.

4a.

Be it Resolved, That we, the Kansas Veterinary Medical Association, in our fourth annual session assembled, that in view of the able and efficient services rendered by our worthy secretary, Dr. H. S. Maxwell, do hereby express our sincere thanks and gratitude.

4b.

Whereas, The success of our present laws governing the practice of veterinary medicine in this state was largely brought about and passed through the efforts of Hon. C. A. Stannard, be it hereby

Resolved, That we extend to him our appreciation of his efforts in our behalf, and instruct that a copy of this resolution be sent him, and further, that it be recorded on the minutes of this association.

4c.

Whereas, The management of the Kansas State College has been very liberal in opening their doors and assisting in every way possible in making this meeting a success, be it hereby

Resolved, That a vote of thanks be extended to them and that Drs. Schoenleber and Barnes be especially remembered.

4d.

Whereas, There is no more important question before the people of all civilized countries than the quick, sane, economical eradication of both human and animal tuberculosis, be it hereby

Resolved, By the Kansas Veterinary Medical Association, that it heartily approves of the work of the International Tuberculosis Congress, which meets at Washington, D. C., September 21 to October 12, 1908; that each and every member of this association do everything in their power to co-operate with this movement; that Governor Hoch be petitioned to appoint a veterinarian as one of the official delegates from Kansas.

4f.

Whereas, No more important question confronts the people of Kansas than the complete eradication of tuberculosis;

Whereas, Education is the first requisite in this campaign;

Whereas, While veterinary practitioners residing in various parts of the state are at heart desirous of carrying on such an educational propaganda, it cannot help but be interpreted by some of our clients as an *agitation* instead, and therefore unjustly interfere with the legitimate livelihood of the practising veterinarians;

Whereas, The veterinarians at the Kansas State College are public servants of *all* the people, be it hereby

Resolved, That the extension department of the Kansas State College enter this field; that a copy of this resolution be sent to the honorable members of the Board of Regents and Supt. J. H. Miller, of the Kansas State College.

O. O. WOLF,	}	<i>Committee on Resolutions.</i>
W. FLANDERS,		
E. H. KILLIAN,		

BURTON ROGERS, *Secretary.*

NEWS AND ITEMS.

"I would not think of being without the REVIEW though it cost many times the price."—(*Robt. P. Smith, D. V. S., Edison, Neb.*)

G. W. BROWNING, V. S., has resigned his position as veterinary inspector, B. A. I., to become Assistant State Veterinarian of Alabama.

DR. WM. H. GRIBBLE retires from the position of secretary of the Ohio State Veterinary Medical Association with eighteen years of faithful service to his credit.

A DAINTY dairymaid in Cologne, Prussia, having read that milk baths enhanced female beauty, bathed in the milk she was employed to sell and then sold it to her employer's patrons.

The Board of Trustees of Cornell University has appointed Dr. Veranus A. Moore, Director of the New York State Veterinary College, to take effect upon the retirement of Dr. James Law, in June of this year.

"Do you think that the automobile will displace the horse?" asked the conversational young woman.

"It will," answered the nervous young man as he gazed down the road, "if it ever hits him."—(*Washington Star.*)

DR. GEO. H. BERNS, of Brooklyn, N. Y., one of the most successful veterinary practitioners in America, recently had the misfortune, while getting out of his carriage, to slip and break his leg. Dr. Bern's colleagues sincerely trust that his recovery may be accomplished with the least possible amount of discomfort and inconvenience.

MINNESOTA VETERINARY ASSOCIATION RECOGNIZED.—The Minnesota State Veterinary Association was recognized and admitted to membership in the State Agricultural Society at the January meeting of the latter body. This means the seating of three delegates, the same representation as the Live Stock Breeders' Association and other similar state organizations which make up the membership of the State Agricultural Society.

It means that the Minnesota State Veterinary Association has a voice in the management of the largest fair in the United States in point of attendance, gate receipts and exhibits.

SWEATERS FOR DOGS.—"I spent the winter in St. Moritz," said a Western girl. "In that white town, 6,000 feet up among the Alps, everybody wears a sweater. Skating, skiing, coasting, if you are not clad in a white sweater your dress is incorrect. The prettiest, quaintest thing there is the way all the dogs wear sweaters, too. A sweater is just the thing for a dog. Fitting tight, leaving the legs free, outlining the graceful body, it is at once comfortable and becoming. And in St. Moritz all the dogs wear sweaters. Bulldogs, dachshunds, collies, fox terriers, each capers about in the white snow in a white sweater."—(*N. Y. Press.*)

ELECTROCUTING ANIMALS.—The slaughter of animals for food by electrocution is being experimented by Dr. Leduc, a French scientist, who has been conducting his investigations in the French abattoirs. He has been using the intermittent low tension currents and says that he is satisfied that the system is painless, the central functions of perception being first destroyed and then those of circulation and respiration, so that there is neither suffering nor reaction in the animals thus killed. The doctor is endeavoring to devise some piece of apparatus by which the killing of cattle may be accomplished by electricity with economy and celerity.

OFFICIAL VETERINARIAN OF QUEENSLAND VISITS AMERICA.—Sydney Dodd, F. R. C. V. S., Director Veterinary and Bacteriological Departments, Brisbane, Queensland, has been in this country some two or three months studying the tick problem. It seems that the Queensland tick is different from our tick and that it is carried by the Queensland goats.

While here Dr. Dodd took advantage of the opportunity of learning all he could of the scope and character of the veterinary sanitary service of the federal government. Among the places he visited was the U. S. Animal Quarantine Station for the Port of New York, located at Athenia, N. J. Dr. Geo. W. Pope, superintendent of the station, extended every courtesy to our distinguished visitor, who carries back to his country a favorable opinion of the veterinary control work of the Bureau of Animal Industry.

MODEL PURE MILK SYSTEM.—As a result of the pure milk agitation in the District of Columbia a bill has been prepared which is intended to establish in Washington, D. C., a model system for other places to copy.

It looks to the thorough inspection of the milk by a large force of inspectors, composed in part of skilled veterinarians. Licenses to sell milk are to be issued only to those that come up to a prescribed standard.

Based on the law, if it is enacted, there will be detailed regulations governing every phase of handling of milk in the District of Columbia and supplying it to patrons.

There will also, it is expected, be a strong demand upon Congress for appropriations adequate to provide a thorough system of interstate milk inspection by the Bureau of Animal Industry.

A large number of municipalities all over the United States are giving attention to the question of getting pure milk, and the officials of the dairy division of the Department of Agriculture are in touch with most of these municipalities, keeping four Government officials in the field constantly for the purpose of co-operating with local boards of health and local officials in making inquiries into the sanitary conditions surrounding the sale of milk.

In recent months, it is stated, about fifty cities and towns in the United States have gone into the sanitary milk problem assisted by the Government officials.

In co-operation with the local officials, the Government experts have made inquiries into the sanitary conditions surrounding the milk business in such cities as Cleveland, Memphis, Richmond, Atlanta, and many other smaller municipalities. Cleveland was one of the first cities to give serious attention to the question of pure milk.—(*N. Y. Journal of Commerce*).

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VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
American V. M. Ass'n.....	Sept. 8, 9, 10 & 11.	Philadelphia..	R. P. Lyman, Hartford, Ct.
Vet. Med. Ass'n of N. J.....	July 9, 10, 1908..	Newark	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	.....	Hartford	B. K. Dow, Willimantic.
New York S. V. M. Soc'y.....	Sept., 1908.....	Utica.....	M. Hamilton, Delhi.
Schuylkill Valley V. M. A.....	June 17.....	Reading.....	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Call of Chair...	Paterson, N.J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	Call Exec. Com.	.....	E. L. Lewis, Waxahachie.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	Wm. T. White, Newtonville.
Maine Vet. Med. Ass'n.....	April 8, 1908.....	Waterville.....	A. Joly, Waterville.
Central Canada V. Ass'n.....	.....	Ottawa.....	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	.....	Lansing.....	Judson Black, Richmond.
Alumni Ass'n, N. Y.-A. V. C.....	April, 1908.....	141 W. 54th St.	T. F. Krey, N. Y. City.
Illinois State V. M. Ass'n.....	July, 15, 1908.....	Galesburg.....	N. I. Stringer, Paxton.
Wisconsin Soc. Vet. Grad.....	.....	.....	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	.....	Decatur.....	C. M. Walton, Rantoul.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	July 2-3, 1908...	Raleigh.....	Adam Fisher, Charlotte.
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
V. M. Ass'n, New York City.....	1st Wed. ea. mo.	141 W. 54th St.	W. Reid Blair, N. Y. City.
Ohio State V. M. Ass'n.....	.....	Columbus.....	Sidney D. Myers, Wilmington.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh.....	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	.....	Rochester.....	J. H. Taylor, Henrietta, N.Y.
Iowa Veterinary Ass'n.....	.....	.....	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n.....	July, 8-9, 1908...	Duluth.....	C. A. Mack, Stillwater.
Pennsylvania State V. M. A.....	March, 1908.....	Philadelphia..	F. H. Schneider, Philadelphia.
Keystone V. M. Ass'n.....	Monthly.....	Philadelphia..	A. W. Ormiston, 102 Herman St., Germantown, Pa.
Colorado State V. M. Ass'n.....	June, 1908.....	Denver	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	.....	Kansas City..	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n.....	Jan. and June..	Providence...	T. E. Robinson, Westerly, R.I.
North Dakota V. M. Ass'n.....	.....	.....	C. H. Martin, Valley City.
California State V. M. Ass'n.....	Mch. Je. Sep. Dec	San Francisco	C. M. Haring, U. C., Berkeley.
Southern Auxiliary of California State V. M. Ass'n.....	Jan. Apl. Jy. Oct.	Los Angeles..	J. A. Edmonds, Los Angeles.
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	Hans Jensen, Weeping Water.
Kansas State V. M. Ass'n.....	.....	Manhattan...	Hugh S. Maxwell, Salina.
Ass'n Médecine Veterinaire Française "Laval".....	1st and 3d Thur. of each month	Lec. Room, Laval Un'y, Mon.	J. P. A. Houde, Montreal.
Province of Quebec V. M. A.....	.....	Mon. and Que.	Gustave Boyer, Rigand, P. Q.
Kentucky V. M. Ass'n.....	.....	Not decided..	D. A. Piatt, Lexington.
Washington State Col. V. M. A.....	Monthly.....	Pullman.....	Wm. D. Mason, Pullman.
Indiana Veterinary Association.....	An'l, Jan., '09...	Indianapolis..	E. M. Bronson, Indianapolis.
Louisiana State V. M. Ass'n.....	.....	.....	E. P. Flower, Baton Rouge.
Twin City V. M. Ass'n.....	2d Thu. ea. mo.	St. P.-Minneap	S. H. Ward, St. Paul, Minn.
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Mississippi State V. M. Ass'n.....	.....	Auburn, Ala..	J. C. Robert, Agricultural Col.
Georgia State V. M. A.....	.....	.....	C. L. Willoughby, Experiment
Soc. Vet. Alumni Univ. Penn.....	June, 1908.....	Philadelphia..	B. T. Woodward, Wash'n, D.C.
Virginia State V. M. Ass'n.....	July 17, 1908...	Norfolk.....	W. G. Chrisman, Charlo'sv'le
Oklahoma V. M. Ass'n.....	.....	.....	W. H. Martin, El Reno.
Veterinary Practitioners' Club.....	Monthly.....	.....	A. F. Mount, Jersey City.
Vet. Ass'n Dist. of Columbia.....	4th Wed. ea. mo.	514—9th St., N. W.....	F. M. Ashbaugh, Wash., D. C.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	Chicago.....	J. Madsen, Chicago, Ill.
Arkansas Veterinary Society.....	.....	.....	B. H. Merchant, Little Rock.
York Co. (Pa.) V. M. A.....	March 3, 1908...	York, Pa.....	E. S. Bausticker, York, Pa.
Philippine V. M. A.....	.....	.....	R. H. McMullen, Manila.
Montana State V. M. A.....	Oct., 1908.....	Helena.....	.....
Veterinary Ass'n of Alberta.....	C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Chicago Veterinary Society.....	2d Tues. ea. mo.	Chicago.....	J. M. Parks, Chicago.

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Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address. Make all checks or P. O. orders payable to American Veterinary Review.

DR. H. J. THOLE REPLIES.

February 11, 1908.

ROBERT W. ELLIS, D. V. S., New York:

MY DEAR DR.—The few lines you so kindly published in January REVIEW brought me 125 letters in reply to same. While I would like very much indeed to answer each and every one with a personal letter, I find this procedure would be impossible at the present state of my health. If it is not asking too much, will you please inform your readers of REVIEW that my practice has been turned over to a Dr. Taylor, of New York City.

Thanking you sincerely for past favors, etc., I beg to remain,

Very respectfully yours,

H. J. THOLE,

Box 18, Brookville, Ind.

We are advised by the PASTEUR VACCINE Co., LTD., sole concessionaires for the United States of the biological products of the Institut Pasteur, Paris, France, that they are now furnishing TUBERCULIN SOLUTION and MALLEIN SOLUTION so that they will keep for several months instead of a few days as heretofore, and that they are also furnishing them in 1, 2, 5 and 10-dose packages. This improvement, no doubt, will appeal to the profession, as it is now possible to obtain Tuberculin and Mallein, ready for use, in just the quantities desired and with the difficulty of deterioration practically eliminated.

This company is continually putting out new and reliable products of interest to the profession, and we suggest that our readers keep in touch with them. They have offices in this country in New York and Chicago.

NITROX CHEMICAL COMPANY TO THE FRONT.

A list of the products of the NITROX CHEMICAL COMPANY will be found on the inside of the front cover page of this and subsequent issues.

THE use of the IMPREGNATOR in horse breeding has become general among well informed stallion owners, as they understand the great help such an article is in breeding and the increased income they derive from their stallions through their use. Get address from advertisement to your right and write for illustrated catalogue, which will be found both interesting and instructive.

VETERINARIANS who desire to keep abreast of the times will avail themselves of the special offer contained in the advertisement of TALLIANINE, on page 18. The syringe referred to is the well-known standard instrument which MESSRS. WALTER F. SYKES & Co. have developed in conjunction with TALLIANINE.

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